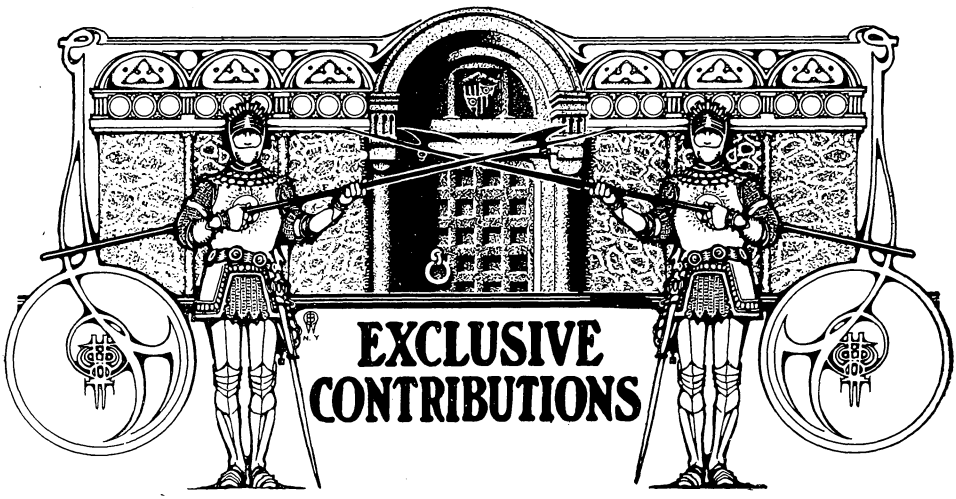


Fusing Porcelain.

By HART J. GOSLEE, D. D. S., Chicago, Illinois.

In the development of the porcelain art probably no one feature of its application has proven a greater stumbling block to the beginner, or more difficult to accomplish with any degree of accuracy even by those possessing more or less extensive experience, than that portion of the manipulative procedure incident to the *proper fusing* of these "bodies" or compounds. Indeed this statement can be even further supplemented by the assertion that there is also no other one feature upon which depends, to so great an extent, the attainment of a maximum degree of success in this class of work.

This latter fact is indisputable and must be readily conceded, because the desirable qualities of any of these compounds, whether they be of the so-called "high" or "low" fusing variety, will only obtain when they have been fused to that degree of vitrification which is necessary to bring about such a coalescence of their particles as will produce the density, integrity, color, translucency and surface which is both essential and possible.

That the maximum of these requirements is essential, all will agree; and, as most of the compounds now on the market are the result of extensive experimentation on the part of their respective manufacturers, and are so carefully and skilfully prepared, the obtaining of these com-

bined desirable results in their use is invariably possible—*provided,* that they are in turn manipulated with equal care and skill.

Whilst it is of course true that *personal equation* enters so largely into the execution of the detail of all pursuits which combine both art and mechanics as to preclude the adoption of methods of procedure which would be universally applicable, or which would be productive of the same degree of successful attainment in all hands alike, yet, it must be remembered that, while genius may be the product of heritage, and individuality the product of environment, *skill* is but the product of *development.*

Hence if the successful employment of porcelain compounds demands that they be skilfully manipulated, and if skill may be acquired by the gradual process of development, then the beginner in this work should not be discouraged by failures, and should not expect to attain universally successful achievements, until he has become at least reasonably skillful.

Pyrometers.

Several *tests* and methods for ascertaining the proper fusing of the compounds now prepared for our use have been suggested, and one or two are more or less generally employed, but it is nevertheless a fact that a method, or instrument, which will denote the proper degree of vitrification with any certainty has not yet been proven to be constant or reliable. Desirable as such an indicator, or pyrometer, would be, however, the probability of its constancy and reliability, in view of the intensity of heat and other varying and intricate requirements, seems almost as doubtful, as it would be difficult to reduce art to a system of mechanics.

In this particular, that electrical genius, Dr. Weston A. Price, of Cleveland, Ohio, has recently invented a pyrometer in connection with a furnace, which has a scale, designated in both Fahrenheit and Centigrade, indicating the fusing points of the various metals and porcelain compounds up to and including the highest fusing tooth bodies. While the indicating needle point is necessarily so delicately poised as to be affected by the slightest vibration, this apparatus may nevertheless prove to be practicable. In this event, if the price is not prohibitive, its use may expedite the proceedure, and overcome any and all difficulties which may be otherwise encountered.

Fusing Gauged by the Eye.

But in any event, in the absence of a mechanical or physical method which has been proven to be practicable and positive, and which may be easily obtained by all, and for the further reason that uncertain and unreliable ones will doubtless do more to retard the development of skill than to aid it, I have for a long time recommended that

all who are desirous of doing porcelain work with a maximum degree of success and facility, should learn to fuse "bodies" by the *eye* exclusively.

This is not quite so unreasonable a proposition as some would at first imagine, or as others would seemingly have it appear, when we observe that in the melting of steel—which fuses much higher than any of the porcelain "bodies" used—the required degree of fusion for casting is determined by the color of the heat as observed by the eye.

It has been contended by some that such a practice as applied to "high" fusing "bodies" would soon prove injurious to the sight; and in a recent issue of the *Dental Summary,* Dr. D. O. M. Le Cron, of St. Louis, Mo., in an otherwise excellent article, presumes to say that it is absolutely impossible. In reply to this unqualified statement it occurs to me that in justice to his profession no one should, or has a right to condemn that as being impossible—or even impracticable—solely because it fails in his hands.

The contention that such a practice would ultimately prove injurious to the sight would undoubtedly be tenable—if it were necessary to bring the eyes into too close proximity with the heated muffle, or to watch it constantly during the fusing, but neither is required.

Indeed, if the work is placed in the center of the muffle in such manner as to have the "body" easily visible; and if one has then become sufficiently familiar with the physical change which takes place in the reduction of a granular mass to a vitrious one, the true fusion may be easily detected even in the presence of the required light orange or incandescent heat, and without possessing "eagle eyes," or bringing them closer than ten or twelve inches to the door of the muffle.

The door of the muffle, however, should be opened freely, so as to admit of easy observation, and this may be done with impunity, and with absolute safety to the work, at any time during the process of fusion.

In the use of the higher fusing "bodies" a close observation need not be resorted to until a degree of heat indicated by the deep *orange* color has obtained. This color denotes a temperature about equal to the fusing point of pure gold, and from this point on the door should be opened and the surface observed until the desired vitrification has been reached.

The heat should then be immediately, but gradually, reduced until shut off entirely, and, when the work has lost its reddish color—so that it may not be made brittle by too rapid cooling—it may be removed from the muffle. This latter feature is imperative after the *last,* but need not be scrupulously observed in the *primary* fusings.

A degree of familiarity with the physical change which takes place during vitrification, and which will enable one to thus detect the proper

fusion, may be easily acquired by the continued fusing of small cubes of properly mixed "body" placed upon the labial surface of a central incisor facing, until they can distinguish between the granular surface of the "body," and the glazed surface of the facing, and observe when the surface of the former becomes the same as that of the latter.

The original color of facing or "body" is of no importance in this connection, as all colors of "bodies" are white until the orange heat is reached, after which both facing and "body" assume this color.

By following this experimental procedure anyone can soon learn to fuse porcelain to any desired degree of vitrification with certainty, accuracy, and facility; and without danger of impairing the sight. In the case of naturally weak eyes, however, colored or smoked glasses may be used to advantage; and the *beginner* may possibly derive at least some little self-assurance from the use of a pellet of foil gold placed at the side of the work, the melting of which will indicate the beginning of vitrification of most of the "high" fusing "bodies" now in common use.

The "time test" from this point to the proper fusion, however, is manifestly unreliable because of the variation in the voltage of the current, in the use of the electric furnaces, and of the gradation of heat generated by gasoline or "blast" furnaces. Relying upon such a test is the cause of much of the overfusing and porosity which is so common in unskilled hands, and which so completely destroys the possibilities of this work.

In this apparently simple procedure as in all other artistic or mechanical pursuits, *knowledge* may be acquired by absorbtion, but *skill* only by some little persevering and diligent application.

Practical Dental Prophylaxis With a Practical Means.

By Dr. H. B. HARRELL, Gainesville, Texas.

I would like to say a few things in regard to the care of the teeth. I shall endeavor to look back and tell what I have seen and done and not indulge in theory any more than possible. In support of what I wish to claim, I will give some of my experience of twenty-eight years as conducted from my viewpoint.

A Personal Experience.

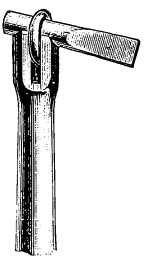
At the age of fourteen my teeth were covered with tartar, and my gums were in a wretched condition. So serious was the matter that my father took me forty miles through the country to Atlanta, Ga., to have something done. We were recommended to go to a dentist. So

we went, and I was left in charge of the dentist, who was instructed to do whatever he found necessary. My father went out to attend to other business, and I took the chair to have my teeth cleaned. The first thing the dentist did was to jerk off from my lower teeth a piece of tartar almost the size of a tooth. I was so frightened and horrified that I jumped out of the chair and protested against having my teeth broken in any such manner, and, before I would get back in the chair, it was necessary for the dentist to get an old tooth with tartar on it and convince me of my folly. He showed me what the tartar was and explained that it would be impossible for him to remove it without using such an instrument as he was using, and that when the tartar was gone that the enamel was left perfect and without a scratch. So he was allowed to proceed to clean my teeth, and, when he had finished, I asked him for a wash for my gums and was told that they would get well without medicine, which I found they virtually did in a few days; but, on close examination, I found that he had not been through, and that there had been some tartar left. So I went to the blacksmith shop and made me a hook as nearly like the one the dentist had used as I could, and found it an effective instrument. With it I soon removed the remaining tartar, and for eight years I kept my teeth practically free from tartar by occasionally scraping them with this instrument. I did not so much as own a brush during that time and I believe that tartar forms on my teeth as rapidly as any that I have ever seen. I have since cared for my teeth in the same way, except I have added the use of the brush. I also use the wood point and pumice as often as I find it necessary.

I started in dentistry twenty years ago, so have cared for my teeth for twenty-eight years, and neither my teeth nor gums show that they have suffered from the lack of care or been injured by any effort to maintain clean teeth. I have to-day patients who are caring for their own teeth in the same way, with the same results, and when I see them and how well they are getting along I feel that the few moments' instruction that I gave them was my greatest service, and am always gratified to see the dental work in such a mouth in good condition. I will mention another thing that perhaps others have noticed, and that is, that all of the boys that I have employed around my office, after seeing me clean a few sets of teeth and hearing me talk to my patients, will get my scalers, and with them clean their own teeth, and do well. I was converted to my idea when I had my teeth cleaned at fourteen, and have constantly grown stronger in the belief. I have failed all through my practice to find a tooth that has been scratched with a pin or a sound tooth that had been injured by cracking nuts, untying knots or any of the things that we are cautioned not to do; and I have failed to see the sense in scrub-

bing with a brush the clean surface of the teeth so often, with no attempt to clean the unclean surfaces and spaces.

How Teeth Should be Cleaned.



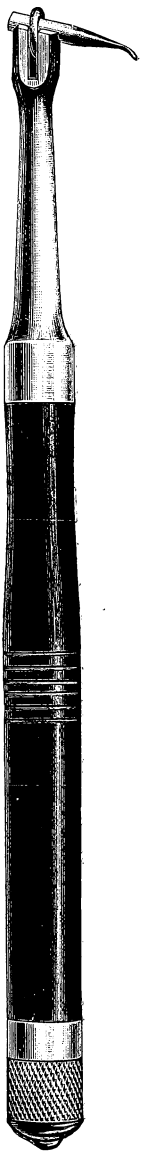


Fig. 1.

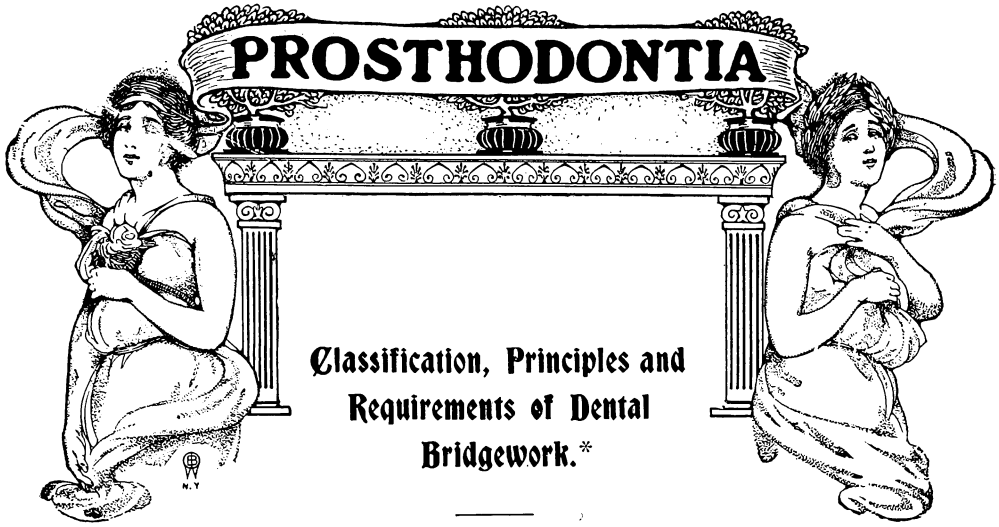
If we expect to accomplish any practical results as educators of the common people through the public schools, or in our offices, we must abandon fogyism and quit theorizing, devise an effective means and develop a simple method of broad application, one that will not only facilitate the work of the dentist, but can be applied to the care of the teeth by the people themselves. Which is simply about this; to know what tartar is and how to remove it with an effective instrument, to know how to remove stains and accumulations from the spaces and difficult surfaces with an effective instrument, and to know not to scrape or scrub any surface when there is no accumulation or stain, and to brush the teeth and gums just enough to clean the mouth. The extent and frequency of this work will differ with different individuals and should be governed by common sense. I think it is time that dentistry and the people were being freed from such fogyism in regard to the care and abuse of the teeth as almost universally exist so far as the people are concerned. I say fogyism, because I believe the authors of such teaching lived before dentistry was born and knew nothing of what they said. I know that dentistry has devised practical means and developed practical methods, of which I will mention only one, and that is the one advocated by Dr. D. D. Smith, of Philadelphia. I cannot conceive of a better method where it can be practiced, but I think its application will be found very limited from the fact that the common people are so ignorant and suspicious that if the average practitioner should recommend to his patients what Dr. Smith does he would be suspected and accused of either trying to swindle his patients or of being a crank. I think something like his method is about the only method that can be relied on for advanced cases; but I think there can and should be a simple and effective method for the people themselves that would prevent these advanced conditions.

EXCLUSIVE CONTRIBUTIONS

A New Instrument.

Being convinced as I have, I long felt the necessity of an effective means to easily reach and clean the difficult surfaces and spaces. For that purpose I some time ago devised and made for my own use an instrument that not only satisfactorily supplied the want, but, with me, has proved the best hand instrument for excavating purposes that I ever saw. As this instrument proved so satisfactory with me I wished to sow the seeds of my convictions and have it placed on the market. In my effort to do this I was soon convinced that if it was done I would have to do it at my own expense, which I have decided to do if possible, and will appreciate a few words of encouragement from any that think my effort worthy to drop me a card. As an experiment I sent out twenty-five instruments to some of the leading men in the profession, for their opinion in regard to the instrument, and for the purpose of getting honest opinions I placed a fair price on the instrument. Notwithstanding the instrument was not what it should have been in several respects the majority wished to keep them, saying they had found them very valuable. In their replies but few expressed themselves in regard to what they thought of it with reference to its use by the common people, but the few that did showed a division on the subject, but in what proportion I cannot judge. I wish to have them made in two grades, one as perfect as possible, for the use of the profession, and the other as cheap as possible, for the use of the common people. The instrument consists of a handle that will clutch and firmly hold orange wood or steel points, scalers, excavators, etc., at a convenient angle to effectively reach difficult surfaces, spaces or cavities. (See illustration.)

The instrument will prove a valuable aid to anyone, regardless of his convictions as to proper prophylactic methods, etc. I will say in conclusion, for the benefit of those that think steel instruments in the hands of the people would result in injury, that the steel instrument can be tinned, giving it a surface of tin and rigidity of steel that will be sufficiently effective. The instrument is to be recommended as a companion of the brush and to do that which the brush or ordinary means will not do.



Classification, Principles and Requirements of Dental Bridgework.*

By Hart J. Goslee, D. D. S., Chicago, Illinois.

Classification: Abutments; Attachments or Abutment Pieces; Dummies. Removable Bridgework. Fixed Bridgework: Extension Bridges, Saddle Bridges, Interrupted Bridges.

The practice of no phase of the science or art of dentistry requires the exercise of so great a degree of *mechanical ingenuity, manipulative ability, artistic attainment, and good sound judgment* as is demanded in the successful application of dental bridgework. Whenever the application may be made along these lines, however, or in consonance therewith, there is also no phase of dental art which offers greater possibilities, or greater opportunities for successful achievements. Furthermore, the success which may be thus attained contributes as much to the appearance, comfort and health of the patient as it does to the satisfaction of even the most conscientious and ambitious practitioner.

Classification.

Technically, dental bridgework constitutes an assemblage of *attachments* or *abutment pieces*, and intervening or adjacent *dummies*, which, when united, afford a continuous incisal or masticating surface.

The principles underlying the mechanical means of supporting the work are derived mainly through attachment to the natural teeth, and while the intervening teeth are usually placed in direct contact with the

contiguous soft tissues, any support which is afforded by, or obtained from, such impingement is necessarily supplementary, and consequently becomes a secondary consideration.

Abutments. The anchorage may be secured either upon the roots, or to, or in the crowns of the natural teeth, and the teeth thus used are known as "abutments."

Attachments or "Abutment Pieces." The methods of anchorage to the natural teeth which are employed may be, and are, designated as *attachments* or "abutment pieces."

Dummies. The artificial substitutes for the missing natural teeth, which are supplied by, and which form the body of the bridge are commonly known as "dummies."

When the attachments or "abutment pieces" and "dummies" are assembled they constitute a mechanical device, which, "like a continuous chain, can be no stronger than its weakest link," and which in its attachment can possess no greater degree of integrity than is afforded by the stability of the supporting teeth. Hence, the practicability of the piece will depend, *first,* upon the stability of the abutments, and, *second,* upon the manner in which it is planned and constructed.

Irrespective of the many variations of construction, the application involves but *two* general lines of procedure. These may be classified as *removable,* and *fixed* or "stationary" bridgework.

Removable Bridgework. Removable bridgework embraces that style of construction wherein an impingement of the body of the piece upon the contiguous soft tissues is supplemented by some form of attachment to the abutments which affords temporary fixation and stability when in position, and yet admits of the ready removal and replacement without disturbing the integrity of any of the parts.

Fixed Bridgework. That type of construction which is designed to be securely and permanently anchored to the abutments in such manner as to preclude its removal without the mutilation of the attachments, thus becoming a fixed or integral part of the denture, is designated as "fixed" bridgework.

Extension Bridges. That style of construction wherein the possible stability of the abutments admits of extending one or two teeth either posterior or anterior to an attachment, without any additional support except that afforded by impingement upon the soft tissues, is designated as "extension" bridges. While usually applied with special reference to "fixed" appliances the principle is nevertheless, of course, likewise applicable to "removable" ones.

Saddle Bridges.

The term "saddle bridges" is applied to that type of construction wherein the body of the bridge is conformed to the outline of, and placed in contact with, a designation is used mainly as it applies and refers to "fixed" bridgework, for the reason that *all* removable appliances are so constructed.

Interrupted Bridges.

The term "interrupted" bridge is applied to that type of construction in which the presence of a remaining natural tooth *not required as an abutment* may cause an interruption in the continuous relation of the parts. The relation of the various parts to each other and the integrity of the bridge, however, is sustained by the use of a heavy bar of platinum, iridio-platinum, or gold, adjusted to conform, approximately, with the outline of the lingual surface of the remaining tooth, without resting upon it, impinging upon the soft tissue, or interfering with the occlusion. This principle is also applicable mainly to "fixed" bridges, though technically it may, of course, be likewise applied to those which are removable.

The Conformation of the Face in Relation to the Development of the Eye.

By F. Park Lewis, M.D., Buffalo, N. Y.

Read before the Institute of Dental Pedagogics, at Buffalo, December, 1903.

The reluctance which I felt in accepting an invitation to read a paper before a body of men engaged in work of a character different from that which occupies my own efforts would have been a prohibition were it not for a common ground which we occupy.

For, while I not only cannot add to your interesting discussions concerning the value of certain molars on the subsequent development of the jaw, or of the methods employed in making less aggressive, prehensile teeth, I am constrained to confess to you that the subject of orthodontia, important and fascinating as it is, is known to me only by the seemingly marvellous metamorphoses which follow the application of your skill.

But although your technique and methodology are the result of careful specialization along lines distinctively your own, I have been impressed for some years by the conviction that the readjustment of the architectural foundations of the skull produce effects which are more than cosmetic, in giving character and dignity to an otherwise weak and vapid countenance; more than mechanical, in opposing surfaces that would not otherwise correctly impinge upon each other, for by altering relationships and thereby permitting functional activity where before the nervous or the lymphatic or the blood supply was obstructed or impeded, you are making possible

fundamental changes in nutrition, in development, in growth, that could not else have been obtained.

When the contour of the arch upon which the brain case rests is altered by an expansion of its base or by a change in its basal curve every buttress and flying buttress is modified by this variation as a direct consequence.

If the bony palate is high and pointed and narrow, and the teeth so crowded that some are erupted out of the normal line, the mechanical fact of spreading the jaw results of necessity in the lowering of the dome,* if the change is made while the tissues are still plastic, and that change of form in the young extends in its bearings upon the maxillary antrum, the orbit and the sphenoid and through these upon the whole calvarium and

Fig. 1.

Sections through skull showing unequal depths of orbit, unequal antra, etc. (from Cryer).

that which it contains. I am sure, therefore, that there is a common ground upon which we can meet, and I do not believe that there is a subject of deeper interest nor one of greater importance than that which we are to consider because it has to do with the actual making of the man, and the determination of his physical and probably of his sensual intellectual and moral attributes. It will be my intention in this paper to demonstrate the thesis, that,

(*a*) normal and symmetrical development requires for its expression the proper performance of function; and

(*b*) that function is frequently impeded by mechanical obstacles, and

(c) that by the artificial removal of these impediments growth will follow.

Consider for one moment the far reaching importance of this statement, if it can be shown to be true.

The keystone of the skull is the sphenoid. If we modify the base

*Does it? Does not the vomer uphold the center of the dome?—Ed.

against which the corner stone rests we are altering a series of contingent relationships; we are modifying the nutritional supply as it is carried to one side or the other, permitting or interfering with, if we begin while the tissues are still plastic, symmetrical development of the two sides of the head, and changing the structural conditions of the mouth, the nose, the face, the orbit, and the eyes, and through these the brain functions and ultimately the brain itself, and therefrom every bodily function and tissue.

It is exceedingly interesting to note, as Cryer has shown in his valuable studies of many dissections of the face, the great variation which occurs in the two sides of the human head. (Fig. 1.) He finds that there is no typal head, that it is a rare exception to find correspondence in form in the right and left maxillae, in the position and shape of the septum, in the proportionate depth of the sides of the same face, and that these vari-

Fig. 2.

Left eye higher than right, with resultant pathological changes in left eye.

ations run through a wide range from those so slight as to pass unnoticed, to those so great that they are immediately evident to even the unobservant eye.

The first proposition which I wish to formulate is:

1. *That normal functional activity of organs designed to act coordinately is based upon their anatomical similarity.*

It is very evident that if one's legs are not of equal length one must limp.

If one's eyes are not of the same size, if the curves of one diameter of the cornea is not that of another, if one eye is more deeply set than the other, and more especially if one is higher than the other the same focal effort will not produce the same result. (Fig. 2.)

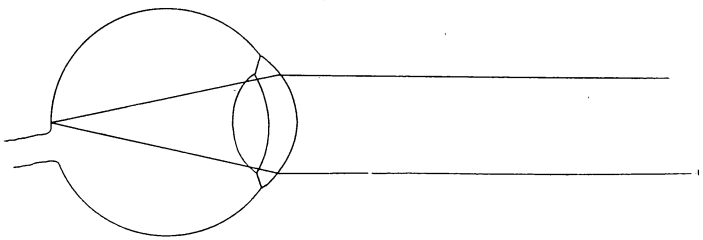


Fig. 3.

Focally normal eye. Parallel rays focused without muscular effort on retina.

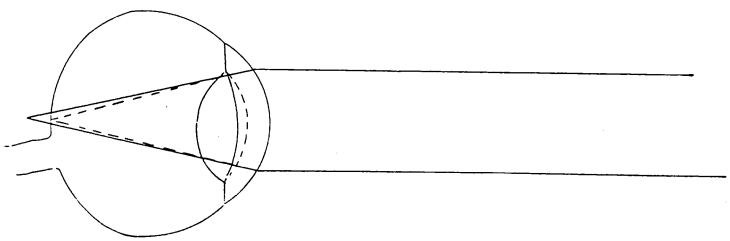


Fig. 4.

The hyperopic eye. Undue muscular effort required to focus light rays on retina.

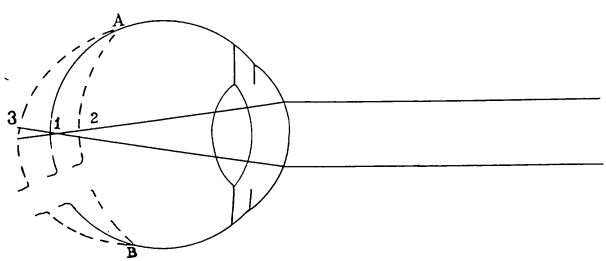


Fig. 5.

A-1-B—Normal meridian in astigma. A-2-B—Hyperopic meridian in astigma. A-3-B—Myopic meridian in astigma. Two of these conditions may exist in same eye, producing torsion strain.

Binocular Vision Explained.

If you will permit me I will sketch in briefest outline the manner in which the function of binocular vision is produced.

When the eyes and their muscles are anatomically alike in form and relationship, or so nearly so as to be considered practically alike, the associated actions are so coordinated that the images formed upon the retina excite sensations which are carried to corresponding parts of the cortex and blending, produce a single effect.

In order that parallel rays of light shall reach the retina, however, without focal effort on the part of the ciliary muscle, the length of the eye ball must bear such a relationship to the refractive system that these rays will be exactly focused on the macula.

Fig. 3 will make this clear.

If the eye is too short in its anterior posterior diameter the rays of light emanating from a point twenty feet or more away will not yet have come to a focus and unless extraordinary effort is made on the part of the ciliary muscle the impression is blurred and indistinct, but as the instinct is always to see, a strong muscular effort permits increased curvature of the lens, and a corresponding shortening of the focus. (Fig. 4.)

If, as not unfrequently happens, two diameters at right angles have different focal values (as I have attempted to show in Fig. 5) a torsion strain must be put on the ciliary muscle to produce lenticular curves that will neutralize those of the deformed eye ball.

Now if again, the eyes are not organically alike, the one being too short from before back while the other is of the normal form, or too long, or if the one is unequally developed in one way while its fellow is irregular in another the effort to synchronize their actions through the brain association of commisural fibres is a source of such profound central disturbance that not only the nutrition of the organs themselves suffer, producing all kinds of inflammatory and degenerative lesions in the eyes, but through reflex irritation directly carried to other nerve centers disturbs the functions of the digestive system, interfering with metabolism, affecting the circulatory organs, and most directly involving the activities of the cerebro-spinal system.

Should the differences in the eyes be so great that they cannot be made to work coordinately, one turns in or out, so that the visual lines are not brought to bear in a common point, the act of vision is carried on by one eye only, and the other no longer in commission gradually loses the ability to see, and a squint not corrected by the production of binocular vision in early childhood results in permanently dull sight, if not an absolutely blind eye.

As these facts are no longer subjects or argument but are generally accepted, I am warranted in my second conclusion that;

Anatomical Asymmetry.

II. *Organs especially intimately connected with nerve centers when not anatomically alike, as frequently occurs in the human eyes in attempted co-ordinate action, produce most profound disturbance of a nervous character.*

Like most of the other structures in the human body, the eye has neither attained its full size nor full functional activity at birth.

The infantile eye is generally shallow. Concerning this Landolt, whose observations have been most careful, remarks:

"The typical hyperopic eye may be considered as imperfectly developed. This arrest of development may vary from the normal human eye, to similarity with the eye of the higher mamalia, in the class and to microphthalmus in the species. It is indeed important to note that the eyes of the lower order of animals are nearly all hyperopic. Moreover, in the eyes of children under eight years of age hyperopia is the rule. They become emmetropic or normal only when later on the body has attained its full development. Finally this refractive condition is unusual in ill-formed eyes, those affected by any defect in evolution."

Further, he continues, "the conformation of the cranium and that of the eye is still more apparent in certain cases of asymmetry of the cranium and of the face. We very often meet people in whom one-half of the head is visibly smaller than the other. One side of the forehead is only partially developed, receding, the cheek bone more or less flattened, and the diameter of one cheek less than that of the other side.

The same difference is also found between the two halves of the palate. One side of the chin is, as it were, atrophied relatively to the other. The median line of the face is not straight but slightly curved and turning its convexity toward the better developed portion, as if the latter tended by its more active growth to surround the other, which has been arrested in its evolution. Frequently the measurement, or even single inspection of the cranium denotes a similar difference.

"In the majority of cases" he goes on, and in this he is supported by the general observation of ophthalmologists "we find corresponding to the less developed half of the head, the eye whose refraction is weaker (the smaller one) oftenest hyperopic or presenting a higher degree of hyperopia if this refractive anomoly exists in both eyes."

Now while the narrow, crowded face irregularly developed is common with inequalities of the eyes the usual form in which the hyperopic or shallow eye is found is the flat or shallow face.

This may or may not be accompanied by nasal obstructions. I think that it frequently is.

Defects, when they do exist, are usually post-pharyngeal, and of course, demand operative intervention.

The fact that the parental form with its accompanying defects may be an inheritance too, must not be forgotten.

The attempt of this paper is merely to show that there may exist forms of asymmetry dependent upon definite obstructions of nutritive channels, and which warrant early, intelligent recognition with a possibility of their subsequent modification.

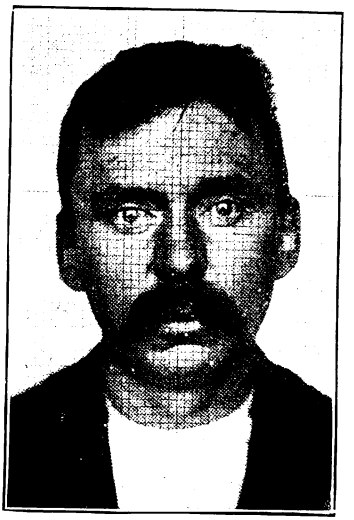


Fig. 6.
Screen method of measuring a human face.

Hyperopia may be spontaneously rectified. The dimunition and disappearance of hyperopia, which takes place gradually in certain individuals during the period when the entire organism is growing and acquiring its definite form, may easily be followed by the aid of the ophthalmoscope. The eye participates in the general development, and from being imperfect as it has been, becomes normal."

The large results produced by small differences in axial length will be appreciated, when I say that a deficiency of 1 mm. will make a difference of 3 diopters, a focus of 13 inches, while a lengthening of curvature of the radius of the cornea by 1 mm. produces a hyperopia of 6 diopters—6½ inches. (Fig. 6.)

I think that I am justified then in the third conclusion from these premises, viz.

Etiology of Asymmetrical Development.

III. *Asymmetry of the skull is so frequently associated with faulty or irregular development of the eyes, that it is safe to assume either that the shape of the eye is modified by the form of the face, or that both are determined by the same cause.*

Are there, then, the question naturally follows, known conditions which influence the form which the face, and therefore the orbit and the eye will ultimately assume?

We definitely know that there are.

As Cryer and other anatomists have shown, the cancellated structure of the bones of the head is filled with canals through which pass the nerves and vessels designed to supply local and distant tissues.

Now when these foramina are narrowed by pressure from adventitious growths or crowding from any cause whatever, the function of the nerves and nutritive channels is interfered with "causing abnormalities in the area of distribution," with resultant atrophy, neuralgia, or other trophic disturbance of the part involved.

Concerning this, Sajous has to say that it will be apparent that any lesion capable of blocking the multitude of afferent and efferent impulses that traverse it at all times and which represent the aggregate of the organisms, inciting and governing energy, must necessarily compromise life, or the functions of an organ to which the blocked nerves are distributed.

Now, as is well known to orthodontists, lymphoid hypertrophies in the pharynx and its vault are very commonly associated with malformation of the mouth and face.

It is not necessary here to enter into the question whether mouth breathing by the suction produced on the plastic palatal bones produces the high arched palate, the narrow jaw, and the crowded condition of the teeth, or whether, as I have discussed elsewhere, the narrowing of the skull bones interfering with the normal lymph flow is the basic element in facial asymmetries and other deformities.

Aside from all theories, it is an observation of almost daily frequency that mouth breathing is associated with facial irregularities, often of high grade, that these in many cases are accompanied by consequent squint, with ultimate amblyopia in the inturning eye.

Stammering when present shows an added lack of co-ordination in the nerve centers.

I have already in a paper, which I had the honor of reading before the "New York Stomatological Society in February, 1902," touching on the same subject directed attention to the remarkable experiments of Ziem, reported in the *Monatschrift für Chrenheilkunde*. Those of you who have followed his work will remember that after sewing up the nostril of young

rabbits he found that on the side which had been made impervious to the air the eye remained in a permanently flat, or undeveloped condition, in other words, abnormally hypermetropic.

The restoration of patency in obstructed nostrils, especially when this is accomplished by the removal of adenoids, is followed by beneficial results, that are so great as to be seemingly out of all proportion to the exciting causes.

The mental hebetude disappears and a most surprising intellectual development follows. These facts, I think, warrant the conclusion that

Effects of Nasal Obstruction.

IV. *Any persistent obstructions in the nose or naso-pharynx interferes with the nutrition and subsequent development of the face and eyes, producing asymmetries of form.*

Fig. 7.
Base of skull, showing relation of foramen lacerum medium to the pituitary body (Cryer).

The limits of time allowed in a paper of this character, as well as the bounds of your courtesy and patience, demand that I race to my conclusions instead of systematically presenting the detailed data, which seem to warrant final generalizations, but you will permit me to speak of the added importance which recent inquiry has given to the pituitary body in this connection.

I had already spoken of this relationship in my previous paper more than a year before the appearance of Sajous's work, on the "Internal Secretions and the Principles of Medicine." *

The pituitary body, it will be remembered, is a bi-lobed organ, resting in the *sella turcica.*

The conclusion concerning it, which Sajous reaches, is that

"The posterior pituitary body is the general center of the organism from which all of the nervous energy transmitted by the bulbar centers arise."

* Chas. de M. Sajous, 1903.

Now the anatomical relationships are such that immediately above the site occupied commonly by adenoid tissue is the *foramina lacerum medium* filled in a normal condition by fibro-cartelagenous tissue and opening into the carotid canal, which bears the carotid artery, the superior cervical sympathetic and the lymphatics.

The important bearing of the sympathetic will be seen, when we recall the fact that from the cavernous reflexes branches are given off to the mucous membrane of the sphenoidal sinus, to the dura mater of the baselar groove, the pituitary, the third, fourth and sixth nerves, and to the Gasserian ganglion of the fifth, and also sends a branch to the ophthalmic ganglion. (Fig. 7.)

The large mortality under chloroform narcosis in adenectomy is in all probability due to the shock conveyed to the posterior pituitary body through the *foramina medium lacerum* immediately over the lymphatic enlargements.

It will readily be seen, therefore, that whatever interferes with the nutritive functions at the vault of the pharynx may disturb the subsequent development of the whole skull and of its contents.

I am now ready for my final conclusion, which is so far reaching in its consequences as to be both novel and somewhat startling, but I am inclined to think that you will agree with me in justifying the deduction from the preceding premises that:

It is not impossible that abnormalities of ocular form, with their disastrous consequences, may be avoided, and normal symmetrical development encouraged by mechanical interference with obstructed blood, nerve and lymph channels, whether in the naso-pharynx, nose or mouth.

Perhaps one of the most important discoveries made during recent years is that the blindness following disuse of a squinting, hyperopic eye, is not inevitable, but that visual training, if undertaken sufficiently early, that is during the first five or six years of life, will preserve the integrity of the nerve centers, that must else inevitably suffer.

I would not be misunderstood in predicating conclusions on the foregone statements involving broad generalizations.

In many asymmetrical faces are eyes which have a normal development; and conversely in many cases, though less frequently, eyes that are focally markedly unlike may be found in faces in which the difference in form of the sides is not apparent. For this there may be several reasons.

(a) The inequalities may be largely in the under jaw, as in the case to which I hear invite your attention. (Patent exhibited.)

(b) Mere axial changes in teeth would not be likely to largely affect the development, although they would greatly modify the appearance and regularity of form.

(c) Definitely anterior alternations of form even in the superior maxillary bone might not influence the growth of the orbit, or eye.

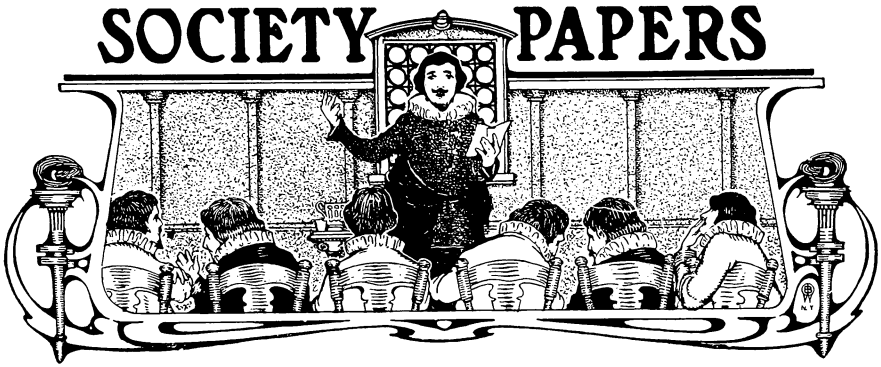
(d) Orthodontia undertaken too late after the future form had been well indicated, would not, in all probability, largely modify developmental results as affecting the eye.

(e) Orthodontia undertaken while post-nasal or nasal obstructions were still present, thereby tending to allow reproduction of the same abnormalities of the vault of the mouth, which mechanical intervention was designed to correct, could not be expected to prevent asymmetrical growth.

But, having produced a normal condition of the air cavities of the head, and at the earliest possible day having corrected existing irregularities of the mouth, we are then in position to begin systematic training of an undeveloped eye.

The manner in which this may be done is of interest, especially to the ophthalmologist, so I will say merely that the intelligent direction of the growth of an immature eye at this stage would lie primarily in an accurate correction of all focal differences, so that the fusion function could be perfectly performed, and then by a gradual reduction of the strength of the spherical lens, as growth progressed development could be encouraged by the same physiological processes that we would employ to produce like results in any other organ or tissue, that is to say, regular systematic exercise, definitely planned and judiciously carried out, with *invariably volitional impulse,* and concentration of the mental energy on the visual act, which must be accompanied by binocular fusion.

The development of any structure, as Dr. Anderson, of Yale, has shown, premises the volitional direction of nervous energy to that part, but before this can be done the mechanical channels must be made free, and whether this be done through the agency of the rhynologist, the ophthalmologist or the orthodontist the gateway is opened for developmental possibilities of such a far reaching character that their results may not even be guessed.



Some Hints in Prosthetic Dentistry.

By C. W. F. Holbrook, D.D.S., Newark, N. J.

Read before the Central Dental Association of Northern New Jersey, January, 1904.

I have a few exhibits to present to you, demonstrating how I have met and treated several problems. It is with a sense of pleasure and willingness that I present these, with the hope that they may prove of value to some of my audience.

Interdental Splint Investment.

My method of investment for rubber interdental splint is as follows: I have here a model of fractured jaw ready for making an interdental splint; also the finished splint. This is a case that has been operated on, and dismissed cured, and with very satisfactory results. Here also is a splint in wax ready for investment. My college instruction taught me to make my investment with model from impression. This method I practiced for a long time, and occasionally some accident would happen, necessitating the taking of a new impression. *That is one impression too many,* as taking the impression of a fractured jaw is usually a very painful operation. I conceived the idea some years ago by accident. It happened while soaking a case for investment, the casts became crushed, but the wax form remained in shape; so I used the wax form with good results, and I have never regretted the accident to that particular case, though I was at that time very much annoyed. Since that time I have made all my rubber interdental splints from the wax form. The model is first covered with tinfoil, over which the wax form is fashioned, the tin being left to protrude beyond the wax, so as to be caught in the investing plaster. The form is then lifted from the cast, and invested in the flask. The results

prove more satisfactory, from the fact that they require little attention in the way of trimming to fit over the teeth; and, again, should some accident happen, you have your casts ready to duplicate, and save trouble of another impression.

Gold Band under Lip.

It is quite often we meet with cases of prominent gum, with short lips, and with both conditions at some time. You well know it is often a trying problem to decide how to do justice to your patients, to your-

Fig. 1.

selves and make a serviceable denture, considering strength, appearance, adaptability and general usefulness as a prosthetic appliance; also considering the pocketbook restrictions of your patient. I do not hesitate to state that my experience has been broad, owing to the fact of having a laboratory for dentists for a number of years, where there came before me many cases very trying to solve. To meet the requirements on prominent gum and short lip, I often fit gold bands with sufficient strength and as little thickness as possible direct to the gum under the lip. (Fig. 1.) My method, practiced at one time (though now abandoned), was to swedge a

piece of half-round gold wire of suitable width and thickness, extending it from first molar to first molar, preparing the ends so the rubber would make good and firm attachments. I have now changed that method for the one I will endeavor to describe. I take pure gold plate, about thirty-three gauge thickness, and cut in a long narrow strip, wider than the band that is to be. I then lay the strip of gold tight to the gum, forcing it in place with a piece of soft rubber, such as comes on the end of a pencil, as an eraser, and let the ends extend well up to second molar. I then take a piece of thin coin gold, about twenty-seven gauge, cut it about the width I wish the band to be, and laying that on the pure gold in place, I press it in position and unite with solder, to make sufficient strength and thickness to allow for finishing, which is done on a lathe with corundum wheel. Then it is ready for polishing. I find it is best to finish the band before vulcanizing, for the reason that there is danger of bending out of place while polishing if it is finished after. This form of making the band is simpler than swaging, is quicker and saves the trouble of making dies, and the result is a perfect fit. The ends to be attached to the plate often afford stronger attachments to their attachments than does the swaging band. I frequently use this method in temporary plates. I formerly used rubber extensions to a point between canine and lateral teeth. The great trouble with rubber extensions was that the extensions broke easily; more than ordinary care must be taken in washing the plates, as sometimes they break.

Saddle Bridge with Diatoric Teeth.

My experience in bridge work has led me to believe that the saddle bridge is very satisfactory, both in appearance and comfort. I have a case to present where the diatoric tooth is used to advantage; the duplicate of this case is in use now, having been in the patient's mouth for the past six years, proving a great comfort and satisfaction. In this case I used plain rubber teeth, backed with pure gold and soldered as the case I present. One of the advantages derived is that of its being like a natural tooth to the patient, as the backing gives the same feeling to the tongue as a natural tooth does. Another advantage is the absence of so much gold in the mouth, as is usually present in bridges. The diatoric tooth is an improvement in the construction and repair of this work; it can be made strong if proper care is exercised in construction and can be repaired with less trouble than the old style bridge. A broken tooth can be replaced more quickly and more satisfactorily than a tooth broken from soldered backing, and again in soldering there is no checking of teeth, which, however, is of little concern to me. The use of diatoric teeth is quite new to me and was suggested by Dr. Sanger, but the use of plain rubber teeth is an old idea.

Porcelain Inlays.

There seems to be fashion or fads in dentistry. There was at one time, and possibly is today among some classes, a desire to show gold in the teeth. What created the desire, I do not fully know, though I will relate an incident that happened in my office. A patient called me up on the telephone one day and asked me if I did work for colored people. I said I did not because my practice did not permit it. She then asked me where she could send her servant to have her teeth attended to and where she would get the same careful treatment that she (the patient) and family had received at my hands, stating that they thought a great deal of this servant. She said she hoped I would try to treat her

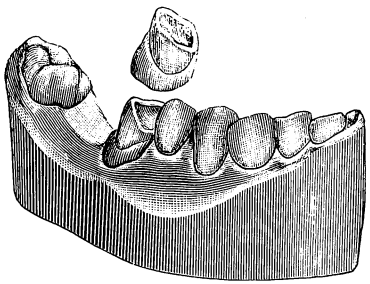
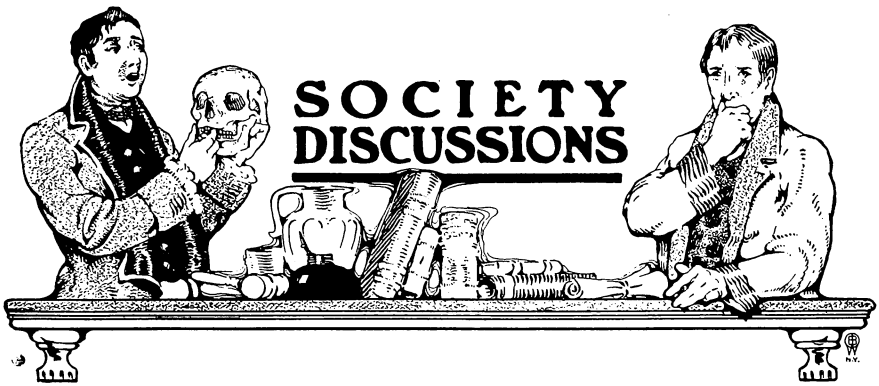


Fig. 2.

myself. I finally consented. The servant called and said that she wanted to have her teeth filled like Mrs. J——— (her mistress) with porcelain fillings so that the fillings would not show. I examined her mouth and found her teeth in a horrible condition; I explained to her that porcelain fillings were rather expensive, and satisfied her with other work, suitable to her station and financial standing. I thought it somewhat singular that the servant should not desire gold. Porcelain inlay work is a fad or fashion, and I will admit it is a good fad or fashion, provided it is worked with good results. It is by no means a cheap class of work, as it is worked today. After some experiences I changed my method of fitting matrices to teeth, to that of fitting to cast, and have had satisfactory results since. My method is to take an impression in modelling compound, and pour in that part of impression where the inlay is to be made, enough exyphosphate of zinc to fill a little more than the cavity impression; then pour plaster in rest of the impression, and the result is a plaster cast with that of the tooth to be filled of much harder substance. As the plaster does not unite with the phosphate we can remove the cast of the tooth from the main model, which is a great convenience, especially in approximal cavities. The advantage to me seems great, as in case of misfit or any other mishap you have cast of tooth in a substance nearly as hard as the tooth itself. (Fig. 2.)



Institute of Dental Pedagogics.

Discussion of Dr. Hunt's Paper, "Dental Curriculum."*

Dr. J. B. Willmott, Toronto, Can.

When I entered upon this work I canvassed this subject from much the same standpoint as Dr. Black. I represent a school that went into the four-year course in good faith. We rearranged the entire course with a view to adapting it to a four-year course so that our freshman course this year differs materially from the previous course in the same year.

When I sat down to prepare this paper, the question arose, "was I to discuss the paper of Dr. Hunt, or the subject, or both?" A little consideration decided for "both." A glance at the programme provided by the executive committee admonished me that my contribution must be brief.

The Dental Curriculum.

The subject, "the dental curriculum," is, to those associated with dental schools, as well as to students, present and prospective, a very important one. It may well be considered under three heads; "the various branches of study to be included," the "time to be given to their mastery as a whole," "and their assignment to the several years of the course." Dr. Hunt discusses first, the second of these divisions, namely, "the length of the course." So far as this institute is concerned, being made up of representatives from colleges in membership in the National Association of Dental Faculties, this is presumably settled as one of four sessions of seven months each. The essayist seeks to reopen the question and argues strongly against a course extending over more than three years.

*Dr. Hunt's paper, "Dental Curriculum," will be found in the March issue of ITEMS OF INTEREST, page 197.

The argument is summed up in the conclusion, that a young man of fair education, not being a "fool" or an "ass" will not study dentistry under a four session course, the reason assigned being that the emoluments and other advantages offered by law and medicine are much more attractive. I think he is decidedly astray in his presentation of the financial argument. My observation, in my own country, is that no class of professional men, entering upon the active duties of their profession, so soon establish a paying practice, and are in a position to marry and form homes and domestic circles for themselves, as the well equipped graduates in dentistry. I venture the opinion, based also on observation, that excluding, say, five per cent of physicians and surgeons and lawyers, who in their wider field command extraordinary fees, which are seldom open to the dentist, the average income of the dentist will exceed that of either of those named. In these United States there are probably one hundred physicians and as many lawyers, who abandon their profession, failing to secure financial success, where there are ten dentists who pursue a similar course, for the same reason. These considerations do not show that the young men who study dentistry are necessarily deficient in their "sanity" or "sense." So long as a fair proportion of dentists are undoubtedly earning good incomes, the pecuniary aspect will not deter suitable men from entering the profession. So far as social position is concerned, every man who is not born to a "social position" must make it, if he ever has it. In making it, in this democratic country, character and culture are much more important factors than his calling, professional or otherwise. The essayist seems to have overlooked another very important factor in the considerations which determine a young man's choice of a calling in life. Men vary greatly in their tastes, ambitions and general mental make up. The type of mental endowment, which would be attracted to pedagogy, law or medicine, would look upon the practice of dentistry as unendurable drudgery. On the other hand, the type that takes intuitively to buying and selling, trading and speculating, would abhor any kind of professional life. The type of man that would be attracted to the profession of dentistry is characterized by the mechanical and constructive instinct associated with the artistic taste. In choosing a calling, such a man would decide between dentistry, engineering, architecture, manufacturing, and similar occupations. These considerations, much more than the length of the course, will be the determining factors in the choice of a calling. My deliberate judgment is that the raising of the standard by requiring a better preliminary education and by lengthening and widening the course, will bring into the profession a class of students coming from a higher social grade and with decidedly truer professional instincts and ambitions. The numbers will, at first, be lessened, but the quality will be improved. The only danger, if danger

there be, will be the possibility, that by the largely increased expense of entering the profession, we may shut out a class of young men, whose ancestors, through many generations, have been engaged in mechanical pursuits, until the constructive instinct and ability have become a positive inheritance. There is no doubt that this class of young men, when possessed of the necessary mental alertness, make the very best and most successful operators.

So far we have considered only those conditions which operate to attract or to hinder young men who are contemplating the study of dentistry. This is not, however, the whole case. What is a reasonable time in which to undertake to make an efficient dentist out of the average student? Dr. Hunt says, that relatively to law and medicine, three sessions are sufficient. Dr. Junkerman says that under any circumstances, three sessions are better than four. Let us inquire into this matter. What is required of the competent dentist? Saying nothing for the present of the scientific knowledge, which is essential to his success, he is required, as an operator, to be able, under very inconvenient, and in many cases very difficult, conditions to make a mechanical operation, which to be useful must be practically perfect, and which requires for its accomplishment as fine and accurate manipulation, and as perfect correlation of the brain, eye and hand, as any work in the whole range of mechanical pursuits. How long a time will be required, on the average, for the student to acquire this manipulative skill? What do we learn by inquiries concerning apprenticeship in mechanical callings, which do not require greater manipulative ability? For example, engraving, lithographing, gem-setting, watchmaking, or of the coarser trades, plumbing, gas-fitting, brass finishing, etc. I understand that three years is considered the shortest time in any of these occupations, in which the tyro may become a "journeyman" and entitled to "union wages." Not three years of seven months each, but thirty-six months of continuous application. The weak point in the American dental curriculum, so far as the development of manipulative skill is concerned, is its intermittent character. A man would be considered far from wise, if he undertook to make an expert engraver by starting a student with eye glass and tool to gradually acquire accuracy of touch and perfect obedience of muscle to will, and then, at the end of seven months, when he was making perceptible progress, take him from his bench, and for five months, with pick axe and shovel, set him to making roads. At the end of the period bring him back to his bench, with eye glass and tool for another seven months, and for three or even four years go through the same absurd procedure. At the end, what kind of an engraver would he be? This is precisely the way in which the accepted curriculum proposes to develop the manipulative skill of the student of dentistry. It is very doubtful if ten

per cent of dental students give any attention to either theoretical or practical dentistry during the interval of college sessions.

Continuity of Study.

Should sessions be longer than seven months? No. If students apply themselves closely to the scientific studies presented and fill up the time with manipulation, the session is long enough to weary, and in many cases to exhaust them. He should, however, keep up his manual training during the entire year, and his attention should not be distracted by other pursuits, if the highest success is to be obtained. But you say the student of law or medicine takes recess of four or five months. True, but their work is purely mental, while that of the dentist is both mental and manual. What of the embryo engineer or architect? His course is continuous, so should be that of the dental student, either in school, office or laboratory. If this intermittent and broken course is to be continued, then I wish to be understood as contending strongly for a four session course of not less than seven months each.

As to what should be included in a dental curriculum, there will not be much difference of opinion, and time does not permit me to discuss it.

As to the assignment of the various subjects of study to the several years, there is likely to be a great variety of opinion, based largely on the varying conditions of different schools in relation to the other faculties in the same institution. In my judgment, our dental curricula are not as logically constructed as they might be. Our purpose is, or ought to be, to educate dentists to successfully treat the pathological conditions of the teeth and surrounding tissues. This requires, in addition to everything else, and may we not say, above everything else, manipulative skill. Skill requires time for its development. We should commence to develop this skill in the first year, and continue it through each successive year. The first year should not be given over wholly, or even principally, to medical and scientific studies. The *work* should be technic, and time filled in with didactic teaching in other subjects. Every subject cannot be taken in the first or even the second year, however desirable it might be. Basic subjects should be taken, first, then those which depend upon them naturally follow. Physics should precede chemistry. Histology should precede physiology. Materia medica and bacteriology should precede therapeutics and pathology. Theory, as a rule, should precede practice. The work should be divided evenly over the four years. In this connection, I want to say that patients in our infirmaries have some rights. They should not be made the victims of crass ignorance on the part of students. Before being admitted to the infirmary the student should have attended lectures on operative dentistry, prosthetic dentistry, pathology, and therapeutics. This

he may do in his second year, and be permitted to work in the infirmary the whole of his third and fourth session, reviewing his didactic teaching in dentistry at the same time.

The writer has been occupying the position of dean for twenty-seven years and has given some consideration to the dental curriculum. As a result of experience, observation and conference, he ventures to submit the following as being complete as to matter, fairly even as to distribution, and reasonably correct as to sequence.

Curriculum for a Four-Year Course.

First Year—Lectures: Histology, bacteriology, comparative dental anatomy, metallurgy, physics, materia medica, operative and prosthetic technic, commence anatomy. Laboratories: Histology, operative and prosthetic technic.

Second Year—Lectures: Therapeutics, orthodontia, crown and bridge work, complete anatomy, commence dental pathology, operative and prosthetic dentistry and chemistry. Laboratories: Practical anatomy, operative and prosthetic technic, crown and bridge work technic, orthodontia technic.

Third Year—Lectures: Electro-therapeutics, complete operative and prosthetic dentistry and dental pathology and chemistry, commence physiology, medicine, surgery and general pathology. Laboratories: Infirmary, operative, prosthetic, orthodontia, crown and bridge work, chemistry, bacteriology, pathology, porcelain technic.

Fourth Year—Lectures: Jurisprudence, physical diagnosis and anesthesia, complete medicine, surgery and physiology, history of dentistry, ethics, hygiene and prophylaxis. Laboratories: Infirmary, operative, prosthetic, orthodontia, crown and bridge work, porcelain work, chemical metallurgy, clinical medicine and surgery at the General Hospital.

Dr. G. V. Black, Chicago.

Dr. Hunt has given us a very frank expression of his views in regard to the four-year course, and also a very good resume of the curriculum for the three-year and four-year courses. Perhaps, I might as well say a word in regard to the curriculum.

The Four-Year Course.

I have not troubled myself much as to the curriculum of the four-year course, believing that until that course is devolped further in practice, it is not necessary for us to worry our minds as to how the studies should be arranged in that course. I have started my freshman class on the same course of studies precisely that I followed in the three-year course, and I expect to continue them in the same way in the second year, allowing the new curriculum to develop itself as the four-year course is developed.

There is a very good reason for that, about which I have spoken to you before. Immediately after the four-year course was adopted a resolution was offered that would shut off from return, under the conditions of the three-year course, all those who were out for more than one year; which in due time became a law of the Faculties Association. This will give us students for the first year of the four-year course that we must graduate in three years' time. And for these it is well to keep open the three-year course. It is well to keep in the line of the three-year course for the first three years of the four-year course, and after that we will have plenty of time to give them in the fourth year, such work as they may require. Then, too, we can shape our four-years' course so as to meet the demands.

This was my idea from the beginning and was my idea when I opposed the resolution of shutting off men from the three-year course who shall have been out for more than one year, so that we would not have these men mixed up with the four-year course afterward. I do not expect that the schools of this association will become entirely harmonious at once as to their curricula. It will require considerable time to do that; but I think the development in that line is satisfactory; perhaps, I have more to do with this than any man in the association, for the reason that I have such a large number of students coming to me from other schools. The difficulties in classifying these men are very great, and will be for some time to come. I have had to go over this work of classification for nearly seventy students this year who have come to us from other schools; and in this work I get to see the difficulties existing in the curricula of many schools, as we do not see it in any other piece of work we have to do.

As to the curriculum: I would make some things different. I want two years in histology, even in the three-year course, and in some of the other studies I would arrange the time differently. But we will come together on this in time.

Now as to the desirability of the four-year course, basing it purely on the question of desirability: We will argue it from that standpoint alone, or from the position taken by the Faculties Association, and our indisposition to go back on that which we have done. I know the history of progress in dentistry pretty well. I have been careful to tabulate the progress from the one-year course of four months, followed by graduation, to the two-year course of four and five months, followed by graduation. In the two-year course some schools gave six and seven months, and others gave only five. Then the progress to the three-year course, and now the progress to the four-year course. We had the same difficulties in passing from the two to the three-year course. I remember that one man at that time told me that he did not know how to dispose of the time. I expressed my

regret at that, because I did not know how to do enough work for the students in three years.

At the beginning of the three-year course the freshman class in most schools was very small. Apparently many students hesitated to go in on the three-year-course, and many schools were discouraged on account of the small freshman classes, and many would have been glad then to go back to the two-year plan. But it was only a short time before the schools had as many students as they ever had before (not more than three years), and in five years from the time we went from the two-year course to the three-year course the aggregate of graduates in the schools of the country was as high as at any time during the two-year course, and one-third more tuition was being paid into our schools than during the same period of time in the two-year course, which amply repaid the schools for the additional teaching work they were doing.

This is what statistics show as to the progress made, and the same will be true in the change from the three to the four-year course. It will take us a little longer, but not much. The development of the schools is not quite so rapid now, as when we went from the two-year to the three-year course. That was the time of boom in dental school work; that has slacked somewhat at present, and the number of dental students are not increasing as rapidly. But within four years, at least, we may expect that we will have as many students as we had at our last session of three years; barring the extra number of students that rushed in to obtain the three-year course. In a few years after that we will be graduating as many dentists as we are today. Therefore, from a financial standpoint we have no reason to fear the four-year course.

Is Dentistry Progressing?

Now, from another standpoint: While the essayist has given you an elaborate description of the student seeking a profession, yet his references to dentistry have been such as I do not like to hear before this association. I do not care to mention these references specifically, but I take an entirely different view of the matter. I have taken some pains to study this problem. I thought it my duty to my university to do so. They have asked me about this; what would be the result; what is dentistry doing; what is its future; why should four years' time be required? And for this reason I have given this matter considerable thought. I have looked about me as to what dentists are doing; whether they are leaving their profession and taking up other pursuits. As to whether lawyers and doctors were doing likewise; and I made some comparisons on that point. The results are very favorable to dentistry, and I do not believe that the *ears of the dentists are lengthening today,* nor will they in the future. I have gone

to the houses dispensing materials to dentists, and I have asked them about their clerical force ten years ago and now. I have asked about their sales ten years ago and now. I inquired not only as to the differences in dollars and cents, but also as to the difference in the quality of material used. One house showed me their books of twelve years ago. I do not believe that this house is getting a greater share of the business proportionately today than they did then; in fact, I believe that they are not getting as great a share of the business now as they did then. Twelve years ago they had twelve men in their employ as clerks, dispensing their goods. Last fall they had sixty-three. As to the quality of the goods used—they told me that a large share of the increasing business had been in the more expensive goods; those used by the better class of dentists.

Furthermore, the traveling salesmen with whom I talked said that in the little towns throughout the country, where, ten years ago, there were no dentists, because they could not make a living, there are dentists today, and these men are buying goods, and they are paying their bills. What does this mean, gentlemen? Simply this: Dentistry is developing more rapidly today, and the use of dentistry, the employment of dentists by the people, is greater now than it ever was before. The people are becoming more critical. They are demanding better dentists; they are requiring more of their dentists; they are looking more carefully and knowingly into the quality of dental work than ever. Therefore, the dental houses find a better class of dental goods in demand. Why is this true? Because we are sending out a better class of dentists now than ever before. They are serving their clientele better, and the people are making greater use of the dentist now than then. That is the reason, too, why these houses are selling more and better dental goods. The demand for the service of the dentist has doubled within less than ten years, and it will double again within the next ten years, if we send out men who are capable and honest in serving them.

Is Dentistry an Attractive Field of Labor?

Gentlemen, these are facts that cannot be gainsaid. Any one of you will find this to be true. The demand among our people is for educated men; better men than we can properly prepare in the three years of time of the material we must take into our dental schools at the present time. The demand is for a higher class of men; men who can and will do honorable work; men who are capable of giving excellent service. I grant that there are men who pass through our schools in a perfunctory way who do not practice afterward; or practice, and then fall out; but the proportion is not so large as in either law or medicine. Today the large majority of men who graduate from our schools go out and practice dentistry successfully. This cannot be said of either law or medicine, especially the former, because the majority of men who graduate in law

do not make successful practitioners. A larger proportion of those who go out to practice medicine fail than is true of the dentists. I grant that some lawyers make more money than some dentists. Dentistry is not a profession in which men pile up money very rapidly, but it is a profession in which a larger proportion of men make a good and honest living than is the case with the graduates in any other profession.

Now, is a man a fool who makes a choice of that which gives him more certainty of a good honest living, rather than to choose that which has in it the prospect of making a fortune, or nothing at all? I think not. A greater proportion of men succeed in earning a good fair living in dentistry than they do in the mercantile business. In fact, I do not know of any business today to which I can point and say that it is safer for the young man than dentistry; that is, a man who comes with educational requirements that seem to be necessary to him to enter dentistry.

The Four-Year Course.

As to lengthening the course: If I had had just my way about it, I would have said, "Let us go to the high school graduation first, and to the four-year course later." I would rather have had our students have those other two years in the secondary schools than the one additional year in the dental school. But I gave way to the majority, understanding its meaning as I understand it now. I am not disappointed in the result thus far. I have no reason for wishing to recall my vote. I am not convinced that I was wrong or that the profession was wrong.

Only one year after we went to the three-year course the proposition to go to the four-year course was made, but few were in favor of it. And every year since, but one, it has been before the Faculties Association, every year receiving more votes, and growing in favor, until the year at which it passed it seemed inevitable, and nearly every one voted for it. Every man had the opportunity to study this matter, and study it carefully, and I feel, gentlemen, that it would be a shame, after having studied it for ten years, then passing it and giving an extra year, before putting it into effect, that we should go back upon our action. It seems to me that the educational world will say that the dental profession should be ashamed to go back upon that vote. My advice is to stand fast to that which we have done. Show to the world that we are in earnest; that we mean what we say; that we are doing this for the better education of dentists. We are doing this so that our men may go out strong men; that when the people employ our graduates they will not be disappointed in the result. Let us put our shoulders to the work with a determination to do it well; to send out young men as well fitted as it is possible to make them; and then the people will applaud our action.

Advance Standing for Academic Degrees.

Now as to the plea that no recognition is made in dentistry of the man who has a B. S. or A. B. degree. A resolution is now before the Faculties Association allowing the schools to advance men having such a degree, if they do their work sufficiently well, so as to enable them to graduate in three years; and judging from the discussion of it, I have no doubt as to the result. There are many things in our rules that are arbitrary and unjust. They were the best at the time of their passage, but they are not so now; they will be changed gradually. There is also a resolution before the Faculties Association for the recognition of the work done in other than dental schools. There has been an arbitrary injustice in the rule that none but graduates of medical schools should have any credit on time. That was an unjust ruling, and we have the machinery in motion to wipe that out and make more just rules.

As to the rule in regard to medical schools: We have made the rule that none but graduates shall be allowed time, when, as a matter of fact, the studies upon which they are allowed time come in the freshman and sophomore years entirely, and not in the other years. It worked an injustice. We will give these men credit for work done in other schools and will allow them the time required to do this work up to a certain extent, but we must recognize that the purely dental curriculum must require a certain length of time, no matter what advantages the man has had in the way of other education. From two and a half to three years are required for this part of the work, and it must be met, no matter what the education of the man may be.

But we have not had any difficulty with that in the past, and there will be none in the future. It requires time to bring all these matters into shape, and it will be done as the years pass by. As to standing fast—there are some of us who feel discouraged because our freshman classes are very limited this year. But, gentlemen, hold on. If you can do your work well you have no reason to fear.

Dr. E. H. Long, Buffalo, N. Y.

There is one feature in the address and the discussion that appeals to me. I am sometimes consulted by young men as to which they shall take up, medicine or dentistry, and being somewhat conversant with the work in both, I feel that I have been able to direct them along lines of fact, and usually place the matter in about this way:

Dentistry is a growing field, and Dr. Black has very well set forth his belief that during the last ten years the demand for the services of the dentist has doubled. I think we need only to add that the field of dentistry is limited only by the degree of education of the people concerning the value

of the preservation of their teeth. Contrasted with that, the field of medicine is restricted, and it is becoming more and more restricted, because there are less diseases to treat. You will at once appreciate this when I refer to what would have occurred twenty years ago in case of scarlet fever occurring in a family of ten. At that time all the children in the family would have taken the disease; today only the one child need have the disease, because it is isolated promptly. The statistics of New York show that the death rate from tuberculosis has diminished forty per cent. All this means that many diseases are being prevented and that the field of the physician is being restricted.

In regard to the expense: I tell these young men that it costs more to acquire a medical education than a dental education, which is a fact. The essayist was in error when he stated that the fees in medical colleges range from fifty to a hundred dollars per year. The cost of equipment of a first-class medical college today is so great that the fees must necessarily be higher than those of the dental college. Most of the better class of medical colleges have fees above one hundred dollars, not including laboratory courses and other incidentals. Some medical colleges have fees as high as two hundred dollars a year. And with this the medical student has no opportunity of securing a position as assistant, that will lighten the burden of fees somewhat. I think that the comparison is in favor of dentistry.

Dr. A. G. Friedrichs, New Orleans, La.

It may be temerity on my part to express an opinion on account of the fact that my period of service does not extend over many months. Most of my teaching experience has been gained in the faculty of a post-graduate school of medicine. I accepted the four-year course and am preparing my students on that plan now. I think that it would be a sheer piece of cowardice to acknowledge that we are in a position where we cannot maintain the four-year course. That other professions offer special advantages is not true, and even in medicine, if you wish to engage in one of the specialties a further preparation of at least two or three years is required. No man living who has just graduated from a medical college would attempt to perform an operation on the eye without having had special training in that line of work. Neither would a recent graduate in medicine think of performing a laparotomy, unless he could not do otherwise because of force of circumstances. Such operations are performed only after having had years of experience. He must take further education in these special lines of work.

The fact of the matter is that the profession of dentistry was never arranged properly so as to be taught correctly. The whole plan of instruction is out of joint, and if I had my way, I would not admit a single man to my school who did not have a medical degree. Then we could make our

course one or two years, and teach only the dental specialty. The degree of D. D. S. does not convey all it should; it does not give you the recognition it should. I am an M. D. and I have every privilege that you possess. I have had every honor in dentistry that could be bestowed on a dentist; there is nothing that has not been mine in the way of either dental or medical honors, so that I have no ax to grind. But, we must not acknowledge that the standard has been put too high for us to follow.

Dr. F. E. Platt, San Francisco, Cal.

There seems to be a general impression that if this association recedes from a four-year course it is taking a backward step, of which it should be ashamed. Any man who makes an error and then corrects it has no need to be ashamed of that action. Therefore, if we have made an error in extending our course to four years, and then recede from it, we have nothing to be ashamed of; we simply acknowledge having made a mistake, and do all we can to remedy it.

I have yet to hear a sound argument to prove that the four-year course of seven months is better than a three-year course of nine months. If the colleges which now have a seven-months' course will adopt a three-year course of nine months each they will be giving their students twenty-seven months of work in three years, as compared with twenty-eight months in four years. They will be giving only one month less of tuition. In the four-year course there are fifteen months of idleness, whereas, in the three-year course of nine months there are only six months of idleness, during which time little attention is paid to dentistry. It is a well known fact that if a student has once acquired the habit of study and then breaks it a part of the following term must be spent in reacquiring it. The present course does not tire any student who attends to business while he is in school. Every dentist in active practice works ten or twelve months in the year and often many years elapse before he feels that he can afford to take a vacation.

I believe firmly that there is no retrogression if a three-years course of nine months is adopted. To go back to a three-year course of seven months would be retrogression, but there is a decided advantage in the three-year course of nine months, and I am convinced that we can make as finished a dentist, so far as any school can make him, in that time as in four years of seven months each. The only argument I have heard is that some students must have five months during the year in which to earn enough money to go on with their studies. But that is rank nonsense. If a student leaves the college for five months and does something else during that time he is losing the habit of study which has been instilled into him. If a student must work his way through school, he would better commence his studies one year later and work a year longer before entering, so he will

have enough money to carry him through college without having to return to his previous occupation.

We cannot improve the standing of dentistry by adding to the length of the term unless at the same time we improve the material we have to work upon. If we are going to have dentists what they should be, let us be careful about the material that we take into our colleges. Increase the preliminary requirements; get students who already have their education; get students who have been taught habits of industry and who want vacations only long enough to give a helpful rest.

If we are going to make the four-year course one of nine months in each year, very well; that would be a decided gain, but this is not true of the four-year course of seven months.

Beneath all this lies the question of fees, upon which all our colleges are more or less dependent, but I do not like the undercurrent running through all our meetings, leading to the belief that the fee is the main thing. Until the question of fees is subordinated to the fact that we must turn out a good and finished product, we are not doing our best. Many of our teachers are not receiving good fees; many of them are losing money by teaching, because they are losing valuable time at the office; but they continue to teach because they feel they are aiding the profession, and are doing their duty not only to the profession but to the public as well.

Dr. R. H. Hofheinz, Rochester, N. Y.

If I had my way, I would demand four years of nine months. The question of vacation has been forcibly impressed upon me by the remarks of Drs. Platt, Hunt and Willmott, and, although I came here to advocate strongly the four-year course of seven months, I am now in doubt, after listening to the arguments of these gentlemen, whether that course is the best thing for our schools. We all know what a long vacation in our own practice means. What does it mean to the student who is away from dentistry for five months, and who, during that five months, does not apply himself? Of course, there are many who are obliged to earn sufficient money for their next course. These men will apply themselves, but that class is always in the minority.

The law of supply and demand applies to scientific work, as it does to business. When our three-year course was established we did not have the amount of work to do that we have today. Look at our didactic teaching! Look at our bacteriology. Where was it ten years ago? Take crown and bridge work; take porcelain work; we must have additional time. But I do not at all agree with Dr. Fredrichs, who advises to take medical students and claims that in two years we can make first-class dentists of them. I do not believe that. I remember a number of instances, and particularly a

graduate from a European university. It took that man two years to learn the difference between a square and a round hole.

I plead not only for the additional time, but also for specific preliminary education, and it is for that very reason, as Dr. Hunt correctly stated, that so many of our dental students later on change their vocation. They are unfit to practice their profession, and that unfitness should, to a degree at least, be found out before they enter college, and not afterwards.

Dr. W. F. Litch, Philadelphia, Pa.

When in the National Association of Dental Faculties the proposition to extend the course from three years to four years came up for a final vote, I had instructions from the Pennsylvania College of Dental Surgery to vote for a three-year course of eight months, rather than a four-year course of seven months. That was the preference of our school then, and it is the opinion of our faculty now that properly utilized that time will meet present requirements. We fully recognize the necessity for the extension of the course. Dr. Black has told us that the Faculties Association was ten years in developing the four-year course, and yet when the advance is finally consummated, and two years afterward, he is unable to tell us what he is going to do with that fourth year. The Pennsylvania College of Dental Surgery attempted to formulate a four-year course, and finally concluded to do what Dr. Black has done, to continue the present instruction, with the addition of one or two subjects for study, and devote the fourth year mainly to practical operations and prosthetic work.

An extension of the courses to eight or nine months would be advantageous to our school, because our clinics are most largely attended in April, May and June. If we kept our students at work during these months they would have an abundance of clinical material and would be better fitted for their life work. That is the way we look at it from the practical standpoint.

Dr. Black has said very judiciously and justly that dentistry commands the confidence of the people. That there has been an enormous increase in the amount of dental practice. And that there has been an increase in the proficiency of dental service. All that is true; yet all that advance and increase and progress has been the result of the labors of men who had a training of only two or three years. I came here with an open mind, and I am not ready to vote for an entire reversal of the action of the Faculties Association. But I want to know what we are to do with the fourth year. It is not merely the calendar by which we are to judge of progress, but by work that is done in a given time, and I am convinced that we can do all the work really needed in three years of eight or nine months that can be done in four years of seven months. Education was

made for man, and not man for education, and if we can train men properly in three years of eight or nine months, there is no justification for sacrificing one year of their lives in college attendance, which, however advantageous it might be, is at present not absolutely necessary to the making of a good dentist out of a good student, and certainly will not make a good dentist out of a bad student.

Dr. D. M. Gallie, Chicago, Ill.

It seems to me that all here agree that an extension of time is necessary, but the question now is whether that extension should be to three years of nine months each, or four years of seven months each. And we all agree that another step in advance would be the increase in preliminary requirements of students coming to our dental colleges.

Some advocate a B. S. or A. B. degree, claiming that the holder of such degree should be allowed some time. I believe that that would cause much trouble, because the average young man who comes with an A. B. degree has the advantage over the young man who is only a graduate of a high school. The high school is the highest government school we have, and a graduate from that school, I think, should be entitled to enter our dental colleges or any other professional school. When you go beyond that, there are schools for those who possess advantages that the average young man does not have. When a man graduates from a high school he should be allowed to enter our colleges and be given all the privileges that are extended to the man with a degre.

Furhermore, I can mention schools, East and West, where a B. S. degree can be obtained in three weeks, and in some places the degree can be obtained for $50, without any attendance at all. But few high schools graduate students unless they are fit. We should exact a high school diploma of our matriculants, and I believe in time we will come to it; when we do we will have material that we can teach as much as is necessary in three years of nine months.

In my limited experience in the infirmary I have found that the student who is fortunate enough to be able to stay through the summer and work in the infirmary is far ahead of his less fortunate classmates. From what I have seen I am led to believe that if the colleges adopt the three years of nine months many students will be in such position that they will be able to go the first year of nine months; then take a vacation of three months. And for the next two years they will continue through the whole course of twelve months, putting in their time during the regular college course and working in the infirmary for three months. If they will do that, they will be far better dentists at the end of the three years than the student who attends seven months for four years, with a vacation of five months each year.

As Dr. Willmott and Dr. Platt have said, a young man out five months loses his cunning and the habits of study so that he comes back to school handicapped. I believe that the course is all upside down. The young man coming from the workshop is not on the same plane with the student who is a high school graduate. His mind is not in the same receptive state with regard to the scientific studies. You cannot teach him bacteriology, physiology, histology, etc., with the same degree of understanding. We should start such men in on lines which they can understand. Teach them finger craft. Schools should have all the material and equipment necessary to develop handicraft, and then during three years of nine months you will have plenty of time for the teaching of anatomy, physiology, bacteriology, etc.

Dr. F. B. Noyes, Chicago, Ill.

The highest school is the highest public school, but the State university also is a State institution. Dr. Gallie pleaded first that the graduate of the high school was prepared to continue scientific study, and then he continued to argue in favor of a man having manual training first. A few things occur to me just now that are in favor of the four-year course. One of the greatest difficulties in the dental curriculum so far has been the number of subjects which a student is required to carry at one time. Increasing the length of the three years does not help us out in that respect, whereas the four-year course would. Every teacher knows that it is not desirable for students to carry too many studies at one time, especially when we must teach finger training through the entire course. We must distribute the other work evenly, and that could be done to good advantage in a four-year course, but not in a three-year course. I would be in favor of increasing the number of months per term in the four-year course, but climatic conditions in certain parts of this country would render that impossible.

What is it that has created the demand for the four-year course? It is the increase in the number of subjects with which a man must be familiar, and also a development in the old subjects. For instance, a number of years ago, one course in histology was enough. Today we cannot get along with less than two courses; one a general course, and the other a course applied to dentistry alone, and which cannot be taken until the general work has been completed. In physics we should have a preparatory course and then a special course of applied physics for dentists. The development of porcelain work, of applied electricity in dentistry, of oral surgery, and other special subjects applied to dentistry has made the demand for the increased time, and I would be willing at any time to stand in the face of any one who says they did not know what to do with that fourth

year. The question is what to leave out of the fourth year, because we cannot provide the means of teaching it.

It is not the recognition of the B. S. or A. B. degree that is called for, but a recognition of the work that the degree represents. A degree that does not cover the work of the dental school should not and would not receive any credit. For instance, in my own department of histology, I cannot require a man who comes to us from Johns Hopkins University with a credit in histology to take the work over again under me. But a man coming from some schools of this country may have the same degree as the Johns Hopkins man, but he may not have had the same amount of work, and he would have to take the work in our school again. So that it is only a recognition of the work which the degree represents that is called for.

Dr. S. H. Guilford, Philadelphia, Pa.

All of us present are teachers, and we are all actuated by one desire, which is to improve the quality of the product which we turn out from our colleges. We all agree on one thing, that the dental course as now constituted is not long enough to answer our purpose. So that it resolves itself into a question of whether we shall have a four-year course of seven months, or a three-year course of nine months. That question will, I think, have to be decided by certain things, the principal of which is this: Can we do more for the student in three courses of nine months than we can in four years of seven months? If we can do more in four years, then it is the course to adopt; if in three years, then by all means let us adopt that.

I have been a teacher for twenty-two years, have taken a great interest in everything connected with dental school work, and I have found certain conditions which, I believe, all of you find. Whenever we open our school for a new course of lectures, the students have been more or less unsettled by their vacations, and it takes nearly a month before we can get them down to good solid work. They attend the lectures and perform their tasks, but they do not enter into the real spirit of their work. After the students once get settled it is much easier for them to do the work of the last five or six or seven months than the work of the first two months. For that reason it seems to me that if we could lengthen our course to nine months, and have three years of it, it would be an advantage to the student; much more so than to have four years of seven months each.

If we give a student five months of vacation, he falls out of the line of study and manipulation entirely. The laws of the State or the ruling of the State Boards of Examiners will not permit them to do certain kinds of work during their tutelage, hence, much of the work done at college is lost sight of. If they could practice, the loss would not be so great. There-

fore, I believe by carrying them along for nine months the students would be the gainers.

There is another feature, and that is the getting of good demonstrators. We can get better demonstrators if we contract with them for nine months than for six or seven months. Some men would like to make it a life business, but they do not like to be connected with a school for six months and practice six months; nor can they afford to be idle for five or six months. Therefore, I believe, taking all things together, that our students will be able to do better work, and we do ourselves more credit by having a three-years' course of nine months than one of four years of seven months.

Dr. H. B. Tileston, Louisville, Ky.

It seems to me that the paper as well as the discussion has digressed somewhat from the subject announced in our program. It seems to be recognized fully that we have no spare time for teaching dentistry in three years of seven months each. We have from time to time added subjects to our curriculum, loading it down, until now we are teaching almost everything in the course of dentistry. Why not take students without any limited time at all, and then apply Dr. Hunt's count system? Take in any kind of material and keep it until it is finished, and when finished, turn it out, no matter how long it takes.

Dr. G. S. Shattuck, Detroit, Mich.

Three years ago we adopted the four-year course of nine months and we found no difficulty whatever in filling the time. In fact, if we had more time we could use it to good advantage. We went from fifty students down to eight, but we have come up again gradually to twenty-seven. I, for my part, want to stand by the four-year course.

Dr. F. L. Platt, San Francisco, Cal.

I want to call attention to something said by Dr. Noyes on the number of subjects the student is required to take at one time. Why should he take more studies at one time in a three-year course of nine months than in a four-year course of seven months, when he has the same number of hours in which to study?

Dr. G. V. Black, Chicago, Ill.

I want to remind you that we have a good many schools in the United States in which a three-year course of nine months is impossible, and the gentlemen directing these schools feel so, especially the Southern schools. If we return to the three-year course, it is almost inevitable that we return to the three-year course of seven months, a backward step that we do not wish to take. Therefore, I think that we should put away this idea that all schools can come to the three-year course of nine months.

Another thing: I do not believe that all students abandon work during their vacation. A large percentage of our students stay in the infirmary, so that they really have a nine or ten months course. But aside from this, we need the additional year for the extra work that is demanded of us; the additional preparedness that is demanded of our dental students that we cannot give them in three years' time.

Dr. J. B. Willmott, Toronto, Can.

All the good medical schools have four years, of from seven to nine months, and we are belittling dentistry by cutting our course down to three years. We are publishing to the world that it is a profession inferior to medicine. This we ought not to do.

As to the nine-months course: We live in a very stimulating climate, and yet we find that even at the end of a seven-months course students who have applied themselves very seriously to their work begin to lag, and it is not uncommon for them to break down in the examinations. If they were to continue at the same gait, with the same application, it would be absolutely impossible for them to keep up for another two months, especially in a warmer climate.

A short time ago, in conversation with one of the professors in the University of Toronto, I asked him his opinion with regard to the nine-months course as compared with a shorter course. He said that after many years of experience he had come to the conclusion that men learn more in seven months than in nine, because they cannot keep up the pace so long. I believe that to be true.

Dr. W. S. Bebb, Los Angeles, Cal.

Our school is most heartily in favor of the nine-months course and high school graduation for admission to the dental college. If we in Los Angeles can stand the heat, I do not see why the other Southern schools cannot do likewise. I have never noticed the disposition on the part of the students to lag at the end of the course, as was mentioned by Dr. Willmott.

Dr. S. H. Guilford, Philadelphia, Pa.

I cannot agree with Dr. Willmott. I think he makes an unjust comparison between medicine and dentistry. He thinks we would be belittling dentistry to go back to the three-year course of nine months, after having adopted a four-year course. His idea is that we should take a stand alongside of medicine; that we should claim it; demand it, and hold it. The fact remains that medicine stands higher than dentistry, and anyone who studies medicine covers a larger field, immensely so, than ours. It includes a wider range of studies, and covers them at greater length, therefore the student of medicine studies more

hours and harder in four years than the dental student, so that they cannot be compared at all.

In regard to the argument that in some parts of the country it would not be feasible to have a nine months' course, let me call your attention to one fact. A few years ago the Faculties Association decided to adopt a seven months' course, and met with this objection, principally made by Dr. Brown, of Milwaukee, who said that the Milwaukee Medical College had a six months' course and that the dental department could not extend the course to seven months. The same objection was made by some other school. Dr. Brown asked permission to have a four-year course of six months, instead of three years of seven months. That would be a solution of this problem, to allow the schools that preferred a three-year course of nine months to have it; and to allow those that preferred four years of seven months to have that course.

Dr. L. P. Bethel, Columbus, O.

It seems to me that the estimating of the course by years and months is not exact. It is more or less misleading. The Faculties Association has adopted a four-year course of seven months. Taking a school that begins its course, for instance, on October 6 and ends it on May 5, a full seven months, you will find that there are 135 teaching days, estimating five days per week, which the majority of schools are teaching. In four years there are 540 teaching days. That is the standard accepted by the National Association of Faculties and Examiners. Now, in speaking of schools that wish to adopt a three-year course of nine months and those that wish to adopt a four-year course of seven months, let us make a comparison, and see what we will find.

Take, for example, the University of Michigan, a college looked upon as a leader in dental education, is a nine months' school. According to their announcement they have three days' vacation during Thanksgiving week; two weeks vacation during the Christmas holidays, and ten days in the spring vacation, giving them a total of 168 actual teaching days in the nine months. Now, let the seven months' school teach six days per week instead of five, and during a full seven months' session they will have 169 teaching days, or one more than the University of Michigan has in its nine months' term.

At the Ohio Medical University our present term is thirty-two weeks, We believe in keeping our students busy, so we teach Saturday as well as other week days, and by doing that we get in 181 teaching days during the school year, or thirteen more teaching days than the University of Michigan. In four years we have fifty-two days, or ten and a half weeks, more actual teaching days in our course than Michigan, although our school is looked upon as a short-term school. Take this same school and length of

session, as stated, teaching only three years, and we find that they would have 543 teaching days, or three more than is required by the Faculties Association, and what is accepted at the present time as the standard of a full course in dentistry.

If, then, in three years, schools of this length term have accomplished all that the Faculties Association requires of any school, why should they not be permitted to grant a diploma at the end of that time?

I believe, to be exact and just, that our dental course should be estimated by teaching days, and not by years and months, which is so misleading. Let us adopt a minimum number of teaching days in each year, and in that way place the work on an exact basis, so that all schools will have the same length of total course. If we adopted 540 teaching days as our standard we would not be taking a backward step, for that is all that is now required. There would not be any retrogression, and yet it would be possible to graduate students at the end of three years instead of at the end of four.

Dr. Hunt. Dr. Black says he lost my paper. I am sorry, because his discussion did not get within forty rods of the paper at any time. He says that he has not given any serious thought to the four-year course, and that he expects it to work itself out in a few years. If he had given this matter the attention that Dr. Willmott did or that I did, he might have arrived at some definite conclusions by this time. I took up the four-year curriculum, with the desire to put it into execution, and not in the hope that it would finally work itself out, after a fashion. And it was this desire to put it into execution that led me to the conclusion at which I arrived. Dr. Black rather begged the question when he talked about students coming in in time. I tried to make it understood that I was not arguing the question from the standpoint of the number of students that would present themselves, but from the basis of whether this additional time was really needed. I regretted that he took up the financial end of the question, because I eliminated that purposely from my paper.

The question is, is there a limit to the amount of time needed. If we need four years, do we need five, or ten years, or twenty years? There must be some time that is ample for the teaching of dentistry. I argue that if the subject is presented properly three years is enough. Dr. Black does not argue that point at all. He says that we have gone to four years, so do not let us go back. If three years is enough, why stick to four? If we can arrange the three years to give the same amount of work as in four years, why make the student remain in school the extra year? Those are facts, and not sentiment.

I purposely talked pretty roughly about the rewards in dentistry. It

was neglected by the other speakers, much to my disappointment. When an ambitious boy leaves school he believes that by the time he is thirty-five years old he will have the world by the tail and that he will be looking for a place to throw it. The young man just out of school is not looking for an occupation that will give him a "modest living;" he is looking for an opportunity to achieve great things. He wants to be rich and renowned.

But take the ordinary bright young man with ample opportunities in the way of preliminary education, and let him look over the field. Does he find any men in the dental profession who are known, like Senn, Jacobi, Lister, Hare, and others in the medical profession? Or like Choate, Elihu Root, Chief Justice Harlan, and other noted lawyers? Where are our dentists that come before the eyes of the world like the men in these two professions? We do not have them. Most of us keep out of the poor house, and some pay rent instead of moving every month, but none of us get the rewards that are given to the foremost men in medicine and in law. I was not talking about the general run of practitioners, but about the leading men. Take the ten best dentists in Chicago and compare them with the ten best physicians and lawyers, and they are not in it for prominence. It is not a matter of brains or learning, but the profession does not bring them before the community in a prominent way, and the young man who is about to enter upon his studies in some profession, if he looks at the matter in a calm and dispassionate way and is not influenced, cannot help but note the fact that the profession of dentistry does not offer to the very best men in it the rewards the other professions offer to their best men.

That is the point I wanted to bring out in the paper. There is no man to whom I will yield in loyalty to the dental profession, but I see no necessity for trying to throw sand in each other's eyes.

Dr. Black also said that we need the extra year because we cannot turn out the men we should in three years' time from the material presented. That is a part of my argument. You cannot turn out good men from the material presented. But how can you improve the material presented by adding another year to the course? Get better men in the freshman class and you will not need that other year. The fact that there are some resolutions pending to relieve some of the evils that exist does not enter into the argument. I treated of conditions that exist now, and not of those that might exist some time in the future.

Dr. Willmott said that dental students are physically unable to take a nine months' course. Are dental students less able physically to take a course in education than are the students of liberal arts colleges? I took three years of nine months in a liberal arts college, and I am pretty husky yet. I believe dental students are capable of attending school nine months

and doing harder work than they do now. Dental students are not worked hard.

Dr. Friedrichs says that the specialist in medicine must have further preparation. Of course he must. If, after graduating in medicine, a man wishes to practice rhinology or laryngology or any other specialty, he should have further preparation. But here is the point. While it takes just as long to get the D. D. S. degree as it does the M. D., the latter may choose between several specialties, while the former has but the one. After a few years in general practice the young M. D. may find his talents leading him toward a certain specialty as being the one he is best fitted to practice, and a little special preparation fits him to practice it. But if the young man in dentistry is not fitted for success in that one specialty, his diploma is worthless to him. Medicine offers a diversified field, in which a man may look for his life work; dentistry confines his choice to the one specialty. And yet it takes the same length of time, according to our rules, to secure a diploma in each profession.

I am not arguing for retrogression. I do not like to go backwards, but I do believe that there was an argument presented here today that can be discussed outside of sentimental grounds. I do not believe in trimming our sails according to what the world at large will think of us. If a thing is right, it is right; and if it is wrong, it is wrong. I like what Dr. Platt said. I would rather hear a man argue a point than to resort to sentiment. This is a matter of importance that should be settled on a proper common sense basis, and not on sentimental grounds.

The Central Dental Association of Northern New Jersey.

January Meeting.

Meeting of the Central Dental Association, of Northern New Jersey, held at Achtel Stetter's, Newark, N. J., on Monday, the eighteenth day of January, 1903.

The President called the meeting to order.

Dr. Stockton's Reminiscences of Dr. Flagg.

Since our last meeting, one of our honorary members, who was loved and respected by us all, has passed away, Dr. J. Foster Flagg, of Swathmore, Pa., died on the twenty-fifth of November last.

Dr. Flagg was a unique character; he thought a great deal of the members of this society, and of the New Jersey State Society, largely so perhaps, because he commenced his dental career in New Jersey. Dental history cannot be written without a very large page being devoted to the life and work of J. Foster Flagg. Dentists are indebted to him probably more than to anybody else for the ability to save teeth with something other than gold. He started when little else than soft gold was used for filling teeth. It has been said of him that he was not a first-class operator with gold and that was the reason why he changed to the use of amalgam. That is not true in any sense, but he realized the fact, as many of you gentlemen do, that there are many teeth that it is impossible to save with gold, and he thought it right that those teeth should be saved, and he enunciated the doctrine that "in proportion as teeth need filling, gold is the poorest material to use," and he fought it out on that line. I remember well in Niagara Falls when he devoted a whole evening before the American Dental Association to the enunciation of this doctrine, which was then new and was called the new departure. As indicating the feeling at that time concerning this doctrine, a resolution was adopted at the next morning's meeting that the remarks and proceedings of the previous meeting be expunged from the record.

A short time after that I heard him in New York before the Odontological Society, occupy a whole evening upon the same subject. Those who have heard him know with what influence, with what wit and sarcasm and bright sayings he could present a subject, and he held the audience all that evening until it was time to close. The programme said "Fifteen minutes devoted to incidents of office practice," and Dr. Flagg jokingly said, "I will take also that fifteen minutes." His life work was the devising of the best means of saving teeth with other materials than gold.

Some men are made round, with the expectation that they will fit into square holes. That was not the case with Dr. Flagg. He was a square man in a square hole. He became a teacher, and no man was ever better qualified for such a position than he. I have been in his class-room when some story was told, and you would think it a bedlam, but the very minute that the expression of fun was exhausted, or thought to be, a motion of Dr. Flagg's hand was sufficient, and the boys were back in their places listening with wrapt attention to their teacher, and all over this land today men are praising the name of J. Foster Flagg, and praising him because they had an opportunity of coming under his teaching. These are things perhaps that are known as well to you as to me. Some of the younger men do not realize, and do not know if the older ones do, whether dentistry is a specialty of medicine or not. I remember one of the most remarkable discussions I ever heard, was held in the Board of Trade Rooms of this city, by this society. Dr. Atkinson, Dr. Rich, Dr. Kingsley, and Dr. Flagg were four princes of Israel, and they participated in that discussion. They were guests of mine at dinner, and we went on chaffing each other as to which side of the question we would take in the discussion. They all took the position that dentistry was a profession by itself. Discussions are tame matters if they are all one-sided, so I took the other side that night and tried to argue that dentists are medical men, just as much as the oculists and gynecologists or any other specialist is, and scarcely ever from that day until the day of Dr. Flagg's death did I ever meet him but he referred to that discussion.

I visited Dr. Flagg only a short time before his death, and I shall never forget it. When I was ushered into the room I was struck by the wonderful change in him since I had last seen him. Disease had done its work, and he was confined to bed. Mrs. Flagg said to him: "Foster, Dr. Stockton has come down to have a little visit with you; now you let him do the talking, and you do the listening, you talk so much yourself." I made up my mind then that I was going to take him out of the pain and worry which had been racking his body and torturing his mind all these months, so we went back over the old days of dentistry, and I recalled many stories which perhaps had become a little bald because of their ancient character, but still he enjoyed them, until finally Mrs. Flagg came upstairs, and said: "What is the matter with you men, what are you doing?" Dr. Flagg was laughing, he was shouting. She said: "Dr. Stockton, I have not heard Dr. Flagg laugh in months before."

I took him out of himself, I took him away from the pain and anxiety he had been suffering, and when I came away he put his arms around my neck and said: "Stockton, God bless you, for coming here today, as I do. I have not had a pain nor an ache since I saw you."

That is a remembrance dear to my heart, which I shall always carry, and I shall ever cherish the name and memory of Dr. Foster Flagg.

Only a few years ago, some of you remember that misfortune overtook me. One of the very first letters I received was one of sorrow and regret from Dr. Flagg, and following that letter came an express package, containing parcels of all the materials he made, plastic fillings, amalgam, and everything of that kind, with even the express charges paid, and from that day until his death he kept me supplied.

That was the kind of man he was. His heart was as big as the world. If he had a friend, he stood by him and helped him. I was not the only one he helped; I have known other men that have been down, and he has furnished them with material, and he has helped them and put them on their feet again, that they might become men amongst men once more. He was one of the grandest men I ever knew. He had his peculiarities, and who of us have not, and I feel that I take your time well tonight when I occupy a few minutes of it in praising the name of J. Foster Flagg. (Loud applause.)

I did not want to have a committee appointed, and I have drafted a letter for our President and secretary to sign and send to Mrs. Flagg, which, I think, will meet the situation. It can be put in our minutes, showing the tribute we want to pay to his memory; it is just a short letter which I know will reach her heart, because she knows how many friends he had in our society. It is as follows:

"Mrs. J. Foster Flagg, Swathmore, Pa.,

"Dear Madam: The members of the Central Dental Society, of New Jersey, assembled for the first time this evening since the death of your husband, send you their sincere sympathy and condolence in the great loss you have sustained. We also mourn his loss as an honorary member, for he was our good friend, and our loss, too, is very great."

Dr. Meeker. I move that the letter shall be signed by the President and Secretary and sent to Mrs. Flagg.

The above motion was regularly seconded and unanimously adopted.

The President then introduced C. W. F. Holbrook, D.D.S., who read a paper, entitled "Some Hints in Prosthetic Dentistry."

Discussion of Dr. Holbrook's Paper.

Dr. Stockton. I am very glad, indeed, that Dr. Holbrook consented to read a paper, for I know from practical experience that the essayist has a great deal of knowledge on the subject. I know that, because he was with me for about seven years.

One of the leading dentists in this town a good many years ago when rubber first came up, used to remove his wax form from the model and then vulcanize the rubber; he did not vulcanize it on the model at all, and that is the idea that Dr. Holbrook holds out tonight in making this interdental splint. It is accurate enough for all practical purposes, and then if any accident occurs, you have your model to fall back on.

Inlays.

Concerning the bridgework, that speaks for itself. Concerning inlays, I think the essayist's idea of taking the impression is an excellent one. There are many places, especially on molars and bicuspids where you do not have the opportunity to separate your teeth, but with approximal cavities in the front teeth, you should separate your teeth and then take the impression and make the model with oxyphosphate of zinc. I like his remarks about getting a matrix to fit the cavity. Any of you who have tried that know how difficult it is. If you don't swear, you feel like it. It is one of the most difficult things in dentistry, but if you have a fairly accurate model, your troubles are eliminated. You can go right ahead in a little while. In half an hour I have made an inlay that satisfied me and satisfied my patient. I had taken the impression on Saturday, run the model on Saturday night before I left my office, and this morning it was ready when the patient came in at twelve o'clock, and it did not take me half an hour to make the inlay. I could never have done that by fitting a matrix in the tooth while in the mouth.

Dr. Turner, of Brooklyn.

I was very much pleased to listen to this paper. It is not very often that we have points brought before us concerning prosthetic work, and yet that is a very important subject. Many of us are familiar with the majority of the points brought out in papers on operative dentistry, but when it comes to prosthetic work, we hardly ever hear a paper on that subject, but that something new or interesting is given to us.

The paper of Dr. Holbrook has been extremely interesting, and I have been much pleased with the use of the diatoric teeth in bridge work. I think that has eliminated one of the most objectionable features connected with the ordinary work, which is the large amount of gold that has been shown, especially back of the cuspid teeth. To be at all sure of strength in the bicuspid, or molor, it has been customary to use so much gold that it has been shown a great deal, but by the use of the diatoric teeth, that is largely obviated, and the strength is still retained.

In regard to the matrix for inlay work, I must say I have not had any success in making them from plaster models. It has always seemed to me that in working on the teeth, if I get the matrix to fit the tooth itself, I am

a great deal more assured of the final result. It is a very difficult thing to get a model to accurately represent a cavity in a tooth, so I have gradually given up that practice myself. If I cannot get a matrix made of the tooth itself, I try some other way.

Dr. Holbrook. I omitted to state that the casts for the inlay work which I exhibit, are some that I happened to find in my office, which had not been thrown away, and every one of them represents a case in actual service today.

Dr. Sanger. I feel gratified that we should have a paper on prosthodontia. It seems to be a fact that from the time the student enters college he conceives the idea that the prosthetic side of his profession is beneath him, and is to be relegated as soon as he begins practice, to some one else, who will do it for him. Consequently, we find that in our dental meetings, dental prosthesis is given a wide berth. Yet whenever half a dozen dentists gather together and chat concerning office pratice, it is surprising to find that in a very few minutes they are discussing some points in dental prosthesis.

The points which Dr. Holbrook has brought out for our consideration will grow upon us as we consider them. They are valuable, because they are peculiar, and I feel grateful to Dr. Holbrook for calling our attention to some of them again. He does not claim that they are new or original, but only that they have helped him out of difficulties.

Concerning the use of gold band, in the lower jaw I regard it as invaluable in some cases, and I know of no place in the mouth where this little gold band running under the teeth and across the front will work with greater advantage. It is better than any clasp you can possibly use on the lower cuspid and gives strength and utility in a place which we all know is a great trial to us and the patient, alike.

Diatoric Teeth in Bridge Work. In regard to diatoric teeth, let me say this concerning a method I use:

Using a bicuspid diatoric tooth for purposes of illustration, the procedure is as follows: The teeth are carefully selected to fit the case with as little grinding as possible. The form in which they are made, with a long curve on the inner surface, permits the cervico-lingual surface to fit the curve of the average ridge, with little or no grinding, but if any grinding is necessary, it should be done on the base of the tooth, rather than on the morsal surface. A piece of pure gold plate about 32 gauge is cut to a size sufficient to cover the base of the tooth and project over the sides about one-eighth of an inch. This is laid on the base of the tooth and burnished to fit as nearly as possible, the edges being turned up all around to form a cup-like shape. A metal ring, which will fit in a crown swager, is filled with hot modeling composition, and

the morsal surface of the diatoric tooth is pressed into it to a sufficient depth to hold it firmly, and the whole plunged into cold water, to harden the composition. With the piece of gold in position on the imbedded tooth, they are placed in the swager and covered with corn meal or some equally yielding substance, and swaged down, until the gold cup fits the tooth accurately. Upon removal, the gold is trimmed to the desired height around the edges, always allowing it to extend well up to the little holes on the approximal sides of the tooth, and then with a ball burnisher it is burnished into the central depression in the base of the tooth. The gold will be perforated when burnishing it into this hole, but the burnishing should be continued until the metal accurately fits the margins. It is then filled about one-third full with gold or platinum foil. The gold cup is then removed from the tooth and the balance of the hole is filled with 20k. solder, until it is flush. This gives you a gold cup and pin, which closely fit the diatoric tooth, holding it so firmly that it would almost keep its place without cementing. With the teeth in the cups, but not fastened, they are assembled on the cast and waxed to each other and to the piers, on the lingual side. The assembled piece is then carefully placed in the mouth and any error in the occlusion is corrected by allowing the patient to bite the teeth to place. The diatoric teeth are then removed from the cups, and the piers and cups are taken from the mouth in an impression of terra-plastica or some suitable investing material. This gives you the pieces invested and ready to solder at the approximal surfaces. For additional strength, a piece of gold plate is laid across the lingual aspect from pier to pier, and the whole overflowed with solder. The polishing should be done with the porcelain teeth in position to prevent possible injury to the fine edges of the gold cups, but they should not be fastened permanently in the cups until everything is completed and ready for the mouth, thus avoiding dirty joints. The teeth may be permanently fastened in the cups, with oxyphosphate of zinc, gutta-percha, or by the use of powdered sulphur, after the manner of attaching English tube teeth to gold plates. In case of the fracture of one of these dummies, the repair can be quickly and easily done in the mouth, as the diatoric teeth are readily duplicated, but the danger of fracture is very remote, as the porcelain is at no time subjected to heat, and you have the full thickness of the tooth incased in gold to withstand the force of mastication. This method gives you a maximum degree of strength, a minimum display of gold and an occlusion, which is well-nigh perfect.

Dr. Luckey. There is but little to discuss in the paper, but I should like to speak concerning Dr. Holbrook's method of inlay work in the matter of using models for the making of his matrix.

I have found that of very great service in my own experience. I find that on the first taking of an inlay it frequently buckles or warps a little, and by going back to my model, I do not find it very difficult to straighten things out and to finish up the work far better than I could unless I kept the patient waiting in the chair all the time while doing the work. I think his method of putting the phosphate over his counter is an improvement on using plaster. I think it a very nice, bright and clever idea. While Dr. Sanger was pleased with the essayist's methods, because they were peculiar, I think they are to be commended, because they are practical.

Dr. Meeker. In Newark, we recognize in Dr. Holbrook a man of considerable reputation in prosthetic work. I was very glad to hear him read a paper tonight. I do not know much about splint work, because I never do it, but in inlay work I think that every man that takes it up has to gain his knowledge from his own experience. He can go by no fixed rule. It is the most difficult work perhaps a dentist is called upon to do, provided he proposes to be perfect in his work and do that which will be a credit to himself and a pleasure to his patient.

I operate nearly in the same way as Dr. Holbrook, with the exception of one line of cases, in which I have never been able to secure results entirely satisfactory to myself. Take the case of a central or lateral incisor that has broken off in a longitudinal section, half way across the tooth; you take an impression of the tooth and build up an inlay. I have built up the tooth with oxyphosphate until it produces the contour of the tooth, and taken that phosphate out and made a matrix with the phosphate model and then attempted to build the inlay by successive bakings. If that same piece of porcelain is put in the furnace again, the condition of the inlay is changed, and consequently one does not get a perfect piece of work; it is one-sided. That has been my greatest difficulty. I can successfully treat molars and bicuspids on approximal surfaces and build up molars, but when it comes to a central incisor or a lateral, I find that difficult, and if any dentist has succeeded in overcoming it, I should like to hear from him. I have seen some of the work of the Chicago men, and I believe they experience the same difficulty.

Dr. Richards. I have been very much interested in the paper and know of no one more capable of doing the work therein described than Dr. Holbrook, and I have adopted the same methods which he describes in many instances.

I would like to ask Dr. Holbrook if he has ever had a case where he has been called upon to treat a fracture twenty-four or forty-eight hours or even longer after the fracture, but where there has been more or less

swelling, and if so, how he proceeded to take an impression of the mouth in that swollen condition.

Dr. Holbrook. In the usual way.

Dr. Richards. But if it is all swollen, what then? Do you use force?

Dr. Holbrook. I have had some very trying cases, in some of which I have had to wait for perhaps three days, until the swelling subsided before I could undertake to do anything. One man came to me from a brick yard, where a pile of bricks twenty feet high fell on him, and he was damaged all over the body; there we had to wait for two or three days for the swelling of the jaw to subside; and his other infirmities also prevented me from operating.

In another case, a woman walked off a three-story building and broke three ribs and her arm and her leg, and pretty nearly killed herself, and she was over sixty years old.

Dr. Richards. I had a case where an ice house fell on my patient.

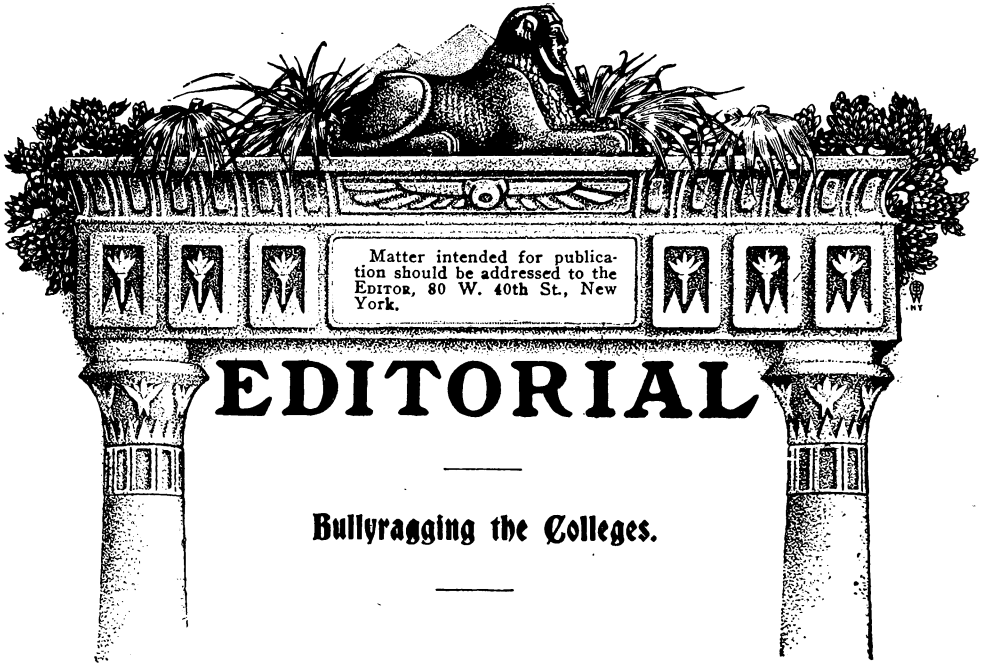
Dr. Holbrook. You often have to wait several days for the swelling to subside.

Dr. Richards. When the mouth is sore, much swelling, or there is contraction and little room to take an impression, by using my fingers and forcing in the modeling compound, I get an impression to the best of my ability of the upper and lower jaw, and to this I apply the jacks, which are used in regulating cases, and by that means I have been enabled, after they were vulcanized, to open by degrees the fractured jaw, so that the patient was enabled to take food, and, after a certain length of time, the swelling would become reduced, so that another and proper impression could be taken, and a larger splint made.

Dr. Holbrook. I am very thankful to the members for their kind treatment of my little effort.

Concerning the casts presented by me, I desire to state that they are not specially selected, but happen to be casts which I found in the office. Each one of these little pieces is separable. I simply waxed them together, so that they would not fall apart, while the exhibit went around the room.

On motion, adjourned.



Matter intended for publication should be addressed to the EDITOR, 80 W. 40th St., New York.

EDITORIAL

Bullyragging the Colleges.

In a discussion of methods of college education recently, a college dean complained that the journals are constantly admitting articles which criticise and condemn dental college teaching. All dental journals disclaim responsibility for the opinions of authors. Their pages are always open to disputants on both sides of any important questions. If but one side has been given, manifestly it is because the college men have not cared to make reply.

ITEMS OF INTEREST assumes responsibility solely for its editorial utterances, and the only editorial criticisms which have been made against colleges have been aimed at flagrant abuses. We exposed certain illegally conducted schools, with the result of arousing foreign interest to such an extent that at least the profession of this country saw the necessity of cleaning house. As the Faculties Association contributed largely toward the expenses of this legal warfare it is not presumable that they blame the course of this journal. We have also in the past had something to say against the methods of advertising college dental infirmaries, but as the Faculties Association immediately formulated a rule forbidding such advertisements, again we felt

that they indorsed what we had undertaken. So much in defense of this and the other journals. But there is another side.

There are undoubtedly in our ranks many men, not teachers themselves, who nevertheless fondly believe that they can teach the teachers how to teach. This style of college critic listens to any and all who have aught to say against colleges, and when half a dozen or more faults have been found, they proceed to find fault, and they vote themselves permission to print. Such articles are usually presented first before some society, and this further exculpates the dental journal, because the publication is but a part of the agreement to print the papers of said society.

These self-appointed critics overlook one important fact. Nothing conducted by human agencies is beyond improvement, consequently it is as possible to find a few faults in our college system as in any other field of work. It only requires diligence. The same degree of diligence utilized in the way of an actual personal investigation of even one college would discover so much to praise that it is not unlikely that the trifling shortcomings would be forgotten.

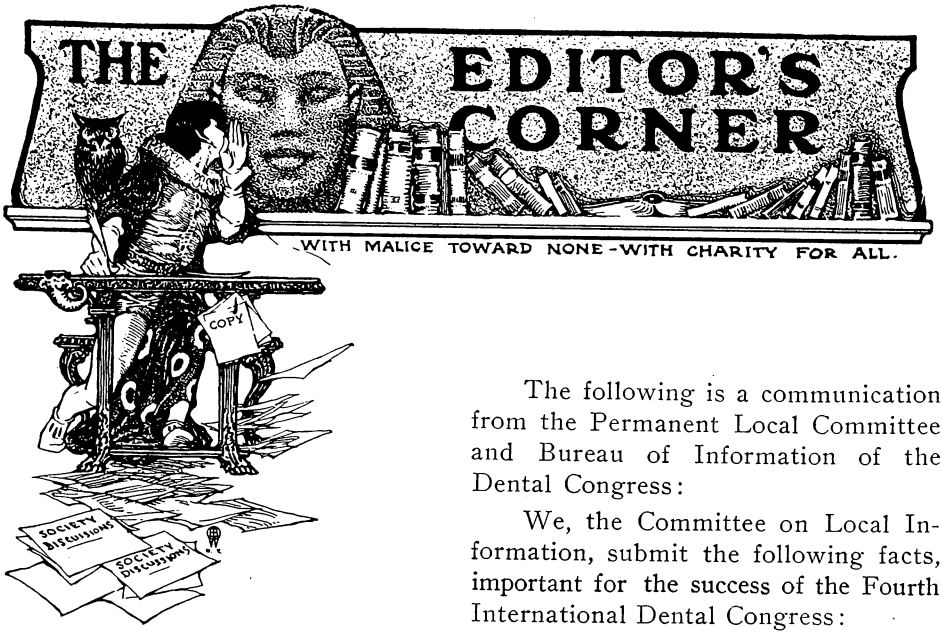
The dental college is comparatively a young institution. We have, even in this country, classical schools that had been in existence more than a quarter of a century when the first dental school opened its doors to its first class. What is the record? Has any other school system made the same advance in methods, in the same length of time? Are not the schools doing more and better work to-day than ten years ago? And were they not better then than a decade prior to that time? Is not the dental graduate to-day, from even one of the lesser schools, better equipped than the graduate from the best school of twenty years ago? Has there not been a steady progress toward higher standards, and is not this progress traceable to the combined efforts of the faculties themselves rather than to the nagging criticisms of those who have had but superficial knowledge of the whole teaching problem?

To the gentlemen who may answer all these questions negatively let this query be put. Suppose that all the existing schools should close their doors, could the critics form themselves into a faculty and organize a school better than any that we now have, and in one, or in

two, or in five years make it beyond criticism? If not, why not permit the present system to proceed on its upward path unhampered by constant and illconsidered fault finding?

In behalf of the colleges we request our readers to carefully peruse the papers and discussions of the Pedagogic Association now running in Items of Interest. They will all be found to be intensely interesting, and will at least prove to the sceptics that the teachers are honestly and earnestly striving to build up the very best college system; one of which all of us may be proud as the American System of teaching dentistry. Indeed to a great measure they have already achieved this aim, and all American dentists should applaud our teachers.

The word "bullyragging" in the caption is used with some hesitancy because the dictionary says the word is "low." But then so is the act.



The following is a communication from the Permanent Local Committee and Bureau of Information of the Dental Congress:

We, the Committee on Local Information, submit the following facts, important for the success of the Fourth International Dental Congress:

Every member of the profession who has at heart the welfare of dentistry should give it support, financially and by action.

We, as American members of the dental profession, would well keep in mind that the Congress will be held in our great country, and pride should prompt us to action to make the meeting one of great magnitude and far excelling its predecessors.

Let every dentist take hold with a will and push it to a successful issue.

This Congress should be of great interest to all of the profession. There is planned a monster clinic from the best clinicians of the world, scientific papers from the pens of the most noted and scholarly men of the profession, and an exhibit to excel all others.

The meetings, the section meetings, the clinics and the exhibits will be held in the great Coliseum, where ample accommodations are secured.

Hotels.

Hotel Jefferson, the general headquarters of the Dental Congress, is one of the most fashionable and complete hotels in the West, if not in America, and is located on Twelfth Street, one block from the Coliseum. Hotels of St. Louis will be sufficient to meet all requirements.

The Information Bureau of the Exposition has a list of ninety-seven well-established hotels now doing business in St. Louis, with a capacity of 41,000 guests, at prices ranging from fifty cents a day up on the European plan, and from one dollar a day up on the American plan. These estab-

lished hotels have been supplemented during the year 1903 by thirty-five new permanent hotels now opening, or about to open, increasing the permanent hotel capacity to 67,000 guests, at prices ranging from one dollar a day up. The Exposition management holds the signed agreement of the leading hotels that "Rates shall not be increased during the World's Fair period." Prices are now lower in St. Louis than in any other city for similar hotel accommodations and service.

The Exposition Information Bureau's list of 132 permanent hotels includes only the better class. There are now 173 hotels, large and small, in operation in the city, and the new hotel enterprises being inaugurated justify the belief that the number will reach 250 before the opening day of the World's Fair.

Besides hotels, with accommodations for more than 200,000 guests, the Exposition Information Bureau has a list of boarding houses and rooming houses of respectable character, on the street car lines, with lodgings for 65,000 guests, and a list of private houses that will let rooms for 20,000 persons.

All over the city, apartment houses and rooming houses are available for those who prefer rooms away from crowds, with meals at the restaurants.

There are 485 restaurants in St. Louis that have a national reputation for good fare, good service, cleanliness and moderate prices. Twenty of these 485 restaurants can take care of 40,000 patrons.

The climate of St. Louis is temperate in summer and most delightful in the spring and fall. It is the most central and accessible of the four large cities of the United States, twenty-seven railways entering it, and passenger steamers on the Mississippi reaching it from North and South.

Railroad Rates.

World's Fair cheap rates on railways and steamboats will be offered during the whole Exposition season, as follows: New England Passenger Association, Trunk Line Association, Central Passenger Association, and the Southeastern Passenger Association.

Tickets will be on sale from April 15.

Season tickets for 80 per cent of double one fare, good to return until December 15.

For sixty days, one and one-third fares, not good to return after December 15.

For ten days, one fare, plus $2, from points within two hundred and fifty (250) miles of St. Louis.

For fifteen days, one fare, plus $2, from points over two hundred and fifty miles from St. Louis.

ITEMS OF INTEREST

The City.

St. Louis is the fourth city of the United States in point of population, having 750,000 people. Certainly no city is more attractive with interest for the student of nature, science, history, etc. There are twenty-four public parks, containing over 2,100 acres, all well improved.

The World's Fair grounds lie five miles from the river, on the western edge of the city, and are reached quickly and comfortably by steam railway and fast trolley lines.

The visitors reach the city through the largest and most beautiful railway station in the world. Thirty-two tracks run into the station, side by side, and the midway, or glass-roofed hall in front of the gates to the trains, will hold 30,000 people. Most of the hotels, except those temporary ones near the World's Fair grounds, are within ten minutes' ride of the station, in the heart of the business district. Street cars, reaching all of the hotels for one fare, pass the station, and the cab, carriage and baggage system is excellent.

The great Music Hall and Coliseum building that is secured for the meetings of the International Dental Congress is downtown, on Olive street, between Thirteenth and Fourteenth streets, within easy walking distance of Union Station, the hotels and the business district. It has a seating capacity for 8,000 people, with section rooms that will be arranged for the various committees and exhibitors.

The World's Fair.

Naturally, every member attending the Fourth International Dental Congress will wish to see the World's Fair. This will be the most magnificent the world has ever seen, and it will probably be the last great exposition to be held in this country for many years, because of the enormous expenditure of labor and money attending it.

Congressman Bartholdt, in a recent speech made before Congress, said: "The Universal Exposition at St. Louis is the apotheosis of centuries of civilization. It is the culminating perfection of those wonderful international spectacles which have served to impress on our minds that it is good to be a living participant in the glories of this world.

"A decade of human achievement has elapsed since the Columbian pageantry of progress at Chicago. Every American who saw the 'White City' thrilled with the thought that the nations of the earth had assembled in the greatest Republic to do homage to the genius of enlightenment.

"Triumphs of the Emperors of Imperial Rome were but the mock pomp of childish fancies compared to the triumphs of peace as celebrated by such a labor of love at St. Louis. On the May Day of this year the gates of welcome will be flung wide open and the vision of the century will then unfold its prophetic beauty for the uplifting of humanity.

"All in all, the Universal Exposition of 1904 will be the sensational climax of the twentieth century, the grandest victory of peace and civilization, the greatest triumph human genius has yet achieved. To millions of its visitors it will be an academy of learning, an inspiration and an inexhaustible source of genuine delight, and the memories of the 'Ivory City' will live and bear fruit in ages yet to come."

Membership.

We appeal to all reputable, legally qualified practitioners of dentistry to interest themselves in the success of this great international meeting.

Let every dentist in America put forth his greatest effort to advance the cause. Make application at once through your State chairman for a membership certificate. See that your fellow practitioner is enrolled, and then, and not till then, will you have done your full duty.

The membership fee to the Congress will be $10. It will entitle the holder to the official badge and all the rights and privileges of the Congress. He will also receive one copy of the transactions. Without a membership certificate it will be impossible to get into the general meetings, sections or clinics, or attend any of the various entertainments given during the Congress.

This great Congress presents to the American dentist an opportunity to see and hear the brightest and most learned men of the profession from all parts of the world, men of international reputation, that shine as clinicians and men of great renown of the inventive turn of mind. This international meeting will be the Mecca of the profession of the world. We will all receive new light and be stimulated to a higher appreciation of our noble profession.

The local Committee of Arrangements and Reception, with its various minor committees, is working with increasing energy and will be ready to meet you and extend you a most hearty welcome.

Any further information can be obtained from the committee.

D. O. M. Le Cron, Chairman, Missouri Trust Building; Max Fendler, Secretary, Missouri Trust Building; George H. Gibson, H. F. D'Oench, G. L. Kitchen, S. H. Voyles, Orem H. Manhard, Joseph G. Pfaff, Permanent Local Committee and Bureau of Information.

Specialists in Dentistry.

The following communication from Dr. George E. Hunt makes one regret that this trenchant writer is not still editing a dental journal. Time was when one could at least once a month cut the pages of the dental journal with a certainty of finding something therein that would make him forget dentistry at least for a few minutes.

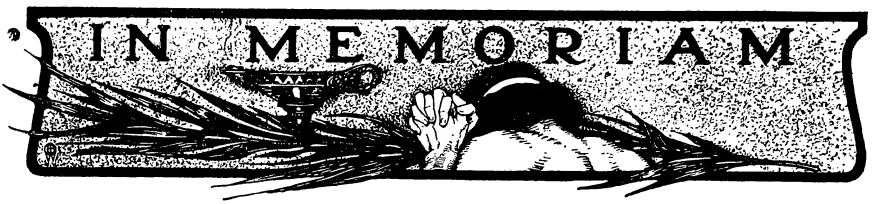
"I note with a grieved expression on my face, your editorial query of 'Orthodontia? Prosthodontia?' in reply to my assertion that the dental graduate must practice 'just dentistry.' Since when have orthodontia and prosthodontia ceased to be 'just dentistry'?

"However, I get your meaning. You want to call my usually vigilant attention to the fact that orthodontia and prosthodontia are specialties that our graduates may select. True, quite true. There are perhaps six cities in the United States large enough to support specialists in those branches. They are New York, Chicago, Philadelphia, St. Louis, Boston and Baltimore. A few others, such as Cleveland, Buffalo, Pittsburg, San Francisco and Cincinnati might serve as a trial for such specialists, but they would have powerful poor picking unless they practiced general dentistry on the side. I imagine there is an opportunity for about two dozen dentists to devote their time exclusively to ortho-and prosthodontia in this country of ours. I do not know of that many that are doing it. What show is there for the other 24,975 to specialize? Now don't come back and tell me that the 'time will come' and all that. I am talking of conditions as they are, not as they may be in the future."

Dr. Peeso's Method.

Dr. Edward H. Angle, of St. Louis, sends the following letter commendatory of Dr. Peeso's method of supplying missing teeth with small removable bridges, as was described and illustrated in the last number of ITEMS OF INTEREST.

"As you are aware, Dr. Peeso's paper was delayed in the mail until too late for reading or discussion at our meeting. I have read it carefully and examined the specimens of bridges which accompany and are described in his paper, and I wish to say emphatically that they are the most marvellous pieces of work from an artistic, as well as from a mechanical standpoint, that I have ever seen in any branch of dentistry. They are extremely simple, eliminating all superfluous parts, and they are more in accordance with the best demands of occlusion than anything yet offered in this line, in my opinion. It would seem to me that this work, if it could be done with the skill that Dr. Peeso has shown, would come the nearest to filling our requirements in orthodontia of anything yet produced. I am extremely sorry that all the members could not have had the opportunity to examine this most beautiful and artistic work, as well as to discuss Dr. Peeso's paper. I expect, however, that they will have the pleasure of seeing it in print."



Dr. Otis Avery.

Dr. Otis Avery, of Honesdale, died on February 22, at his home, West Park street, at the advanced age of 96 years. Death was due to general breaking down of the system.

Dr. Avery was one of Honesdale's most distinguished and prominent citizens, having represented the district in the State Legislature for several terms, and also served on the Wayne County bench as associate judge, first by appointment and afterwards as the choice of the people.

At the time of his death he claimed the distinction of being the only man living who had ridden on the first locomotive ever run in America. Dr. Avery was probably the oldest practicing dentist in America at the time of his retirement a year and a half ago at the age of 95.

Dr. Avery settled in Wayne County more than three-quarters of a century ago, or a longer period than the life of the average man. He saw the country to the north of the Moosics grow from almost a primeval forest to a great agricultural center and was an active citizen in the old days of Honesdale's prosperity as the great tannery mart of the country.

For many years before the dawn of the second half of the nineteenth century he was the only dentist in all that territory from Utica, N. Y., to Honesdale, having his headquarters at Bethany, then the county seat of Wayne County, and traveled over that vast territory on horse-back attending to his practice.

He was born in Bridgewater, Oneida County, N. Y., August 19, 1808, four years before the outbreak of the war of 1812, and learned the silversmith and watchmaking trade. In 1827 he settled in Bethany, then the county seat of Wayne County and established a repair shop. Later he moved to New Berlin, N. Y., where he worked at his trade.

Always ambitious and of a studious turn of mind, he desired to fit himself for a profession and decided to study dentistry. Going to New York, he entered the office of Dr. D. C. Ambler, at that time one of the best known dentists in the metropolis. In 1833 he received his certificate, entitling him to practice his profession.

Returning to the field of his former labors he pursued his calling and

traveled over the territory above mentioned. In 1839 he located permanently in Bethany, where he practiced during the summer months, going to Columbia, S. C., for the winter. For ten years he did this and then located in New York City, where he opened up an office.

He returned to Honesdale in 1859 and continued there until his retirement a year and a half ago at the age of 95 years. Later he organized a company of militia at Coschecton, N. Y.

In 1855 he was elected to the State Legislature to represent Wayne County. In politics he was an Independent. Governor Geary appointed him an associate judge in Wayne County in 1871 and the following year he was elected for a term of five years after one of the bitterest contests in the history of the old county.

At that time there was a great deal of agitation for a new county. Dr. Avery affiliated himself with the Anti-Court House faction and was chosen as their candidate for judge. The two old parties united on another candidate, but Dr. Avery won, polling more votes than the united Democratic and Republican candidate. This is the only time on record where a candidate in Wayne received a larger vote than the candidate of the two old parties.

During his early life he interested himself greatly in mechanical research and invention and in 1850 invented and patented a sewing machine, the American right of which he sold to a New York company and the foreign right to a company headed by London capitalists and the Emperor Louis Napoleon, who then sat on the throne of France.

He also invented and devised many dental instruments which are in use to-day and then set about to work on a typesetting machine. This machine he was never able to perfect. It was probably the first attempt at making a machine that would set type and the practical machine to-day that is in nearly every newspaper office in the world, is built, it is said, on much the same outline as the old Avery machine, a model of which is yet to be found in his home in Honesdale.

He is survived by a widow and five children, three boys and two girls, one of whom is Mrs. Purdy, wife of Judge Purdy, the present judge of Wayne County.

Resolution Passed by the Lackawanna-Luzerne Dental Society.

The Lackawanna-Luzerne Dental Society at a regular meeting held March 15, 1904, adopted the following resolutions upon the death of Dr. Otis Avery, an honored and respected resident of Honesdale, Pa.:

Dr. Avery was an honored member of the dental profession for more than seventy years and passed away in his ninety-sixth year.

Whereas, It pleased the Divine Ruler to remove from this life, Dr. Otis Avery, who passed to the great beyond, February 22, 1904, and

Whereas, The dental profession recognizes the benefits received through his having lived, and by his life given us an example of a true, courteous professional gentleman, therefore be it

Resolved, That in the death of Dr. Avery our profession has lost a man of sterling worth, whose progress in the profession was a source of pride to his colleagues, and for whose example we return thanks to the Divine Ruler, also

Resolved, That we condole with his bereaved family, and a copy of these resolutions be sent to his widow and to the dental journals, and also be inscribed on our official records.

C. S. BECK,
W. A. SPENCER,
E. J. DONNEGAN,
Committee.

Dr. John L. Nailos.

At his father's home in Waterloo, N. Y. on February 26, 1904, at the age of twenty-five, death cut short the earthly career of Dr. John L. Nailos.

SOCIETY ANNOUNCEMENTS

National Society Meetings.

National Association of Dental Examiners, St. Louis, Aug. 25, 26, 27.

Fourth International Dental Congress, August 29 to Sept. 3, 1904.

State Society Meetings.

Alabama Dental Association, Anniston, May 9.
California State Dental Society, San Francisco, May 16, 17, 18.
Delaware State Dental Society, June 1.
Florida State Dental Society, Atlantic Beach, May 25.
Georgia State Dental Society, Athens, June 28.
Illinois State Dental Society, Peoria, May 10, 11, 12.
Indiana State Dental Association, Indianapolis, June 14, 15, 16.
Iowa State Dental Society, Des Moines, May 3, 4, 5.
Kansas State Dental Association, Topeka, May 12, 13, 14.
Kentucky State Dental Association, Louisville, May 17, 18, 19.
Maine Dental Society, Bangor, July 19, 20, 21.
Massachusetts Dental Society, Boston, June 1, 2.
Minnesota State Dental Association, St. Paul, June 16, 17, 18.
Montana State Dental Society, Butte, Feb. 20-21, 1905.
New Hampshire Dental Society, Concord, May 10-11.
New Jersey State Dental Society, Asbury Park, July 21, 22, 23.
New York State Dental Society, Albany, May 13, 14.
North Carolina Dental Society, Morehead City, June 22-25.

Texas State Dental Association, Corsicana, May 5, 6, 7.
Tennessee State Dental Association, Jackson, May 26, 27, 28.
Washington State Dental Society, Seattle, May 26, 27, 28.
Wisconsin State Dental Society, Manitou, July 19-21.

National Association of Dental Faculties.

The next annual meeting of the National Association of Dental Faculties will convene at 10 a. m. June 9th, 1904, in Washington, D. C. The Executive Committee will be in session the afternoon of June 8th to consider such matters as may be brought before it. Arrangements are being made with the railroads for one and one-third fare, on the certificate plan. The hotel, as headquarters, together with the railroad rates, will be announced later by circular letters to the colleges.

(Dictated.) EXECUTIVE COMMITTEE,
H. B. TILESTON, Chairman.
S. W. FOSTER, Sec'y.

Northern Ohio Dental Association.

The forty-fifth annual meeting of the Northern Ohio Dental Association will be held in Cleveland, Tuesday, Wednesday and Thursday, June 7, 8 and 9. The program is a strong one and will be of exceptional interest to the general profession. The motto for the year is the "Annihilation of Pain in Dentistry." Essayists and Clinicians have been selected with this thought ever foremost. The best authorities and the most successful men in this line of work will be at this meeting. The members of the profession are cordially invited to attend. It is expected that we will have the largest attendance of any meeting ever held in this section of the country. You cannot afford to miss it. Come.

W. G. EBERSOLE, Corresponding Secretary.

Delaware State Dental Society.

The Delaware State Dental Society will hold a regular meeting on June 1, 1904.

Wilmington, Del. R. H. JONES, Secretary.

New York State Dental Society.

PROGRAMME.

The officers and Business Committee present the following programme which is one of unusual merit for the thirty-sixth annual meeting. Subjects will appear in the regular notice: President's address, R. H. Hofheinz, D.D.S.; correspondent's report, Ellison Hillyer, D.D.S.; report of Executive Council, C. S. Butler, D.D.S.; report of Committee on Practice, F. W. Low, D.D.S.; report of Committee on Scientific Research, H. D. Hatch, D.D.S.; essay, E. N. Jenkins, D.D.S., Dresden, Germany; essay, Joseph Head, D.D.S., Philadelphia, Pa.; essay, C. H. Land, D.D.S., Detroit, Mich.; essay, D. D. Smith, D.D.S., Philadelphia, Pa.; essay, Geo. E. Hunt, D.D.S., Indianapolis, Ind.; essay, B. Holly Smith, D.D.S., Baltimore, Md.; essay, W. J. Turner, D.D.S., Brooklyn, N. Y.; essay, C. W. Stainton, M.D.S., D.D.S., Buffalo, N. Y.; essay, I. L. M. Waugh, D.D.S., Buffalo, N. Y.; essay, M. A. Cryer, D.D.S., Philadelphia, Pa.

TO THE DENTAL PROFESSION.

The thirty-sixth annual meeting of our Society will be held in Albany, N. Y., Friday and Saturday, May 13 and 14, convening promptly at 10 o'clock, on the morning of the first day, in Assembly Hall, at the Hotel Ten-Eyck, where the Committee of Arrangements have made special rates for all attending the convention. The Business Committee have been indefatigable in their effort to make this a most interesting and instructive meeting, as a glance at the list of essayists will testify. A special feature of the meeting will be clinics on "Porcelain Inlays" by Drs. Joseph Head, of Philadelphia, Pa., and C. H. Land, of Detroit, Mich. The president requests you to be present when the gavel falls at the opening session, and extends a cordial invitation to all reputable members of the profession to attend this meeting. Fraternally,

R. H. HOFHEINZ, Pres.

N. A. WHITE, D.D.S., Sec'y, Phelps, N. Y.

Special railroad rates have been arranged with the Trunk Line Association for this meeting. Ask for a certificate, not a receipt, when you purchase your ticket. Without it you cannot have the benefit of the reduced rates on the return trip.

Reports of all officers and committees must be in the hands of the Executive Council by 12 o'clock of the first day, in order to receive consideration.

Exhibitors desiring space will please apply to Dr. J. L. Appleton, 89 Columbia street, Albany, N. Y.

Kentucky State Dental Association.

The coming annual meeting of the Kentucky State Dental Association promises a dental convention of unusual interest to be held in Louisville, May 17, 18 and 19.

Members of the profession are extended a hearty welcome.

Masonic Building, Louisville, Ky. W. M. RANDELL, Sec'y.

Texas State Dental Association.

The Texas State Dental Association will hold its twenty-fourth annual session at Corsicana, Texas, May 5, 6 and 7. All ethical members of the profession are invited to meet with us.

Dallas, Texas. BUSH JONES, Sec'y.

California State Dental Association.

The joint clinic of the California State Dental Association and the Alumni Association Dental Department of the University of California will be held May 16-19, 1904, in San Francisco. Dr. Hart J. Goslee, of Chicago, will give a series of clinics on porcelain. Dr. Henry A. Baker, of Boston, will give a series of clinics on orthodontia and the Baker anchorage, and a large local clinical programme is also being arranged. All the leading manufacturers have signified their intention of making an exhibit of their products, and the local dealers will also be represented. The session is expected to surpass any previously held in this State.

Southern Wisconsin Dental Association.

The tenth annual meeting of the Southern Wisconsin Dental Association will meet in Beloit, Wis., on June 8 and 9. We anticipate a pleasant as well as a profitable meeting, and a cordial invitation is extended to all.

Clinton, Wis. C. W. COLLOVER, Sec'y.

Massachusetts Dental Society.

The fortieth annual meeting of the Massachusetts Dental Society will be held in Massachusetts Charitable Mechanics' Association Building, Huntington avenue, Boston, June 1 and 2, 1904.

Cambridge, Mass. E. O. KINSMAN, Secretary.

ITEMS OF INTEREST

Maine Dental Society.

The thirty-ninth annual meeting of the Maine Dental Society will be held in Bangor, July 19, 20 and 21, 1904. All ethical dentists are cordially invited to attend, and we especially invite natives who are practicing out of the State to meet with us and make this a "home week." We expect men of national reputation to give clinics and read papers. Reduced rates will be given on transportation and at hotels.

Castine, Me. WILL S. PAYSON, Chairman Executive Committee.

Kansas State Dental Association.

The Kansas State Dental Association will hold its thirty-third annual meeting in Topeka on May 12, 13 and 14.

Lawrence, Kansas. G. A. ESTERLY, Sec'y.

Oklahoma Dental Association.

The fourteenth annual meeting of the Oklahoma Dental Association will be held in Shawnee, Oklahoma, May 10, 11, 12.

Shawnee, Okla. T. P. BRINGHURST, Sec'y.

Iowa State Dental Society.

The forty-second annual meeting of the Iowa State Dental Society will be held at Des Moines, Tuesday, Wednesday and Thursday, May 3, 4 and 5. W. R. CLARK, Pres.,

C. W. BRUNER, Sec'y, Clear Lake, Ia.

Toledo, Ia.

Washington State Dental Society.

The next annual meeting of the Washington State Dental Society will be held in Seattle, Wash., May 26, 27 and 28. Clinicians from other States will be present and an interesting programme is assured by the Executive Committee. A. W. PHILLIPS, Pres.

G. MCGREGOR, Sec'y.

Sixth District Dental Society of the State of New York.

The thirty-sixth annual meeting of the Sixth District Dental Society of the State of New York will be held at the Hotel Bennett, Binghamton, N. Y., on May 5 and 6.

Binghamton, N. Y. F. W. McCALL, Sec'y.

Alabama Dental Association.

The Alabama Dental Association will hold its next annual meeting in Anniston, Ala., beginning on the second Tuesday in May.

Birmingham, Ala. DR. L. A. CRUMLY, Secretary.

New Hampshire Dental Society.

The New Hampshire Dental Society will hold its annual meeting at Concord on Tuesday and Wednesday, May 10 and 11. All members of the profession are cordially invited to be present.

Manchester, N. H. F. F. FISHER, Sec'y.

Tennessee State Dental Association.

The Tennessee State Dental Association will hold its thirty-seventh annual meeting at Jackson May 26, 27, 28. All ethical practitioners of the dental profession are cordially invited to attend.

R. BOYD BOGLE, President,
Nashville, Tenn.

J. T. CREWS, Sec'y,
Jackson, Tenn.

Illinois State Dental Society.

The fortieth annual meeting of the Illinois State Dental Society will be held at Peoria, Tuesday, Wednesday and Thursday, May 10, 11 and 12. A splendid programme, including attractive and unusually interesting features, is under course of preparation. The usual fare of one and one-third—certificate plan—will be obtained on all roads in the State and from St. Louis. Remember the date. All reputable practitioners cordially invited. HART J. GOSLEE, Sec'y.

ITEMS OF INTEREST

Arkansas Board of Dental Examiners.

The next meeting of the Arkansas State Board of Dental Examiners will be held May 10, 11 and 12, 1904, in Little Rock, Ark., for the examination of all applicants.

Those having applied for examination will report to the secretary Tuesday morning, May 10, 1904, with rubber dam, gold, plastic filling material and instruments, to demonstrate their skill in operative dentistry. Any one who wishes may bring his patient; so far as possible patients will be furnished. The Board will select the cavity to be filled. The examination will cover all branches of the dental profession. No temporary certificates are issued at any time. Examination fee, $5. For further information write to the secretary.

A. T. McMillin, Sec'y and Treas.

Oklahoma Board of Dental Examiners.

There will be a meeting of the Oklahoma Board of Dental Examiners held at Shawnee, Oklahoma, on Monday and Tuesday, May 9-10, 1904, for the purpose of examining candidates for license and such other business as may properly come before it. For particulars regarding registration apply to the secretary.

Guthrie, Oklahoma. A. C. Hixon, Secretary.

Minnesota State Board of Dental Examiners.

The Minnesota State Board of Dental Examiners will meet for the purpose of examining applicants for license May 30, 31 and June 1 and 2, 1904. No applications received after 12 m. May 30.

Meeting held at dental department of State University at Minneapolis.

C. H. Robinson, Sec'y,
Wabasha, Minn.

California Board of Dental Examiners.

The Board of Dental Examiners of California will hold its next examination in San Francisco, commencing on May 23, 1904, and will also hold an examination in Los Angeles, commencing on June 13, 1904.

San Francisco, Cal. F. C. Baird, Sec'y.

Illinois State Board of Dental Examiners.

The next regular meeting of the Illinois State Board of Dental Examiners to examine applicants for license to practice dentistry in this State will be held in Chicago May 6 and 7, 1904.

Under an opinion of the Attorney-General, the following are eligible to take the examination before the Board: "Any one holding a medical diploma from a reputable medical college; any one who has been a legal practitioner of dentistry for ten years prior to moving into the State, and any one who failed to register in this State at the time the law went into effect, which was in 1881."

Candidates must furnish their own patients and come provided with the necessary instruments, rubber dam and gold to perform practical operations and such other work as is deemed advisable by the Board. Those desiring to take the examination should matriculate with the secretary at least ten days before the date of meeting. The examination fee is $10. Any further information can be obtained by addressing the secretary.

J. G. REID, Secretary,
1204 Trude Bldg., 67 Wabash Ave., Chicago.

Michigan State Board of Dental Examiners.

The Michigan State Board of Dental Examiners will meet in Grand Rapids, Mich., on the 10th of May, 1904.

Maryland State Board of Dental Examiners.

The Maryland State Board of Dental Examiners will meet for examination of candidates for certificates on May 4 and 5, 1904, at the Baltimore College of Dental Surgery at 9 a. m. Candidates must pass a written examination in anatomy, physiology, pathology, therapeutics and materia medica, operative and mechanical dentistry, chemistry and bacteriology and oral surgery, and must insert a gold filling in the mouth and exhibit specimen of prosthetic work, properly vouched for. Application blanks properly filled, accompanied by the fee of $10, must be filed with the secretary prior to May 4. F. F. DREW, D.D.S., Sec'y.

Baltimore, Md.

The National Association of Dental Examiners.

The National Association of Dental Examiners will hold their annual meeting in the Coliseum Building, corner Thirteenth and Olive Streets, St. Louis, Mo., on the 25th, 26th and 27th of August, beginning promptly at 10 a. m. Telephone and telegraph offices in the building.

The committee on railroad accommodations for the East have made arrangements for fast through Pullman service to St. Louis from New York with the Delaware & Lackawanna Railroad. Two special Pullman cars will leave New York Tuesday, August 23d, at 10 a. m. The cost of our excursion, including berth each way, will be $35.50. A proportionate reduction is made for those going from Buffalo, Toledo, Fort Wayne and cities on the line connecting with the Wabash Railroad. Those who desire to go in the special train should send notice as promptly as possible to Charles A. Meeker, D. D. S., Secretary of the National Association or to Guy Adams, general passenger agent of the Delaware & Lackawanna Railroad.

Accommodations have been secured for the National Association of Dental Examiners at the Franklin Hotel, Northwest corner of Sarah and Westminster Place, with rates from $1.50 to $6.00 per day, European plan. Hotel first class. Secure rooms by writing to E. C. Dunnavant, St. Louis Service Co., Seventh and Olive Streets, St. Louis, Mo.

CHARLES A. MEEKER, D.D.S., Sec'y.

Wisconsin State Board of Dental Examiners.

The next meeting of the Wisconsin State of Dental Examiners for examination of candidates desiring license to practice dentistry in Wisconsin will be held in Milwaukee, at Hotel Pfister, June 1, 1904.

Application must be made to the secretary fifteen days before examination. Candidate must be a graduate of a reputable dental college, or have been engaged in the reputable practice of dentistry, consecutively for four years, or an apprentice to a dentist engaged in the reputable practice of dentistry for five years.

J. J. WRIGHT, D. D. S., Secretary.

1218 Wells Building, Milwaukee, Wis.

California Board of Dental Examiners.

The Board of Dental Examiners of California will hold its next examination in San Francisco, commencing on May 23, 1904, and will also hold an examination in Los Angeles, commencing on June 13, 1904.

San Francisco, Cal. F, C. BAIRD, Sec'y.

New Jersey State Board of Registration and Examination in Dentistry.

The New Jersey State Board of Registration and Examination in Dentistry will hold their semi-annual examination in the theoretical branches in the assembly room of the State House at Trenton, N. J., on July 5, 6 and 7. Sessions begin promptly at 9 a. m.

The practical prosthetic and practical operative work will be done in Newark. All applications must be in the hands of the secretary ten days prior to the examination. For further information apply to the secretary.

CHARLES A. MEEKER, D.D.S.,
Fulton Street, Newark, N. J.

Ohio State Board of Dental Examiners.

The Board of Dental Examiners of the State of Ohio will meet in Columbus, O., June 28th, 29th and 30th, at the Hotel Hartman, for examination of candidates for certificates of registration.

Application should be filed with the Secretary by June 18th. For further information address,

H. C. BROWN, Sec'y.

Minnesota State Board of Dental Examiners.

The Minnesota State Board of Dental Examiners will meet for the purpose of examining applicants for license June 13th, 14th and 15th, 1904.

No applications received after 12 m. June 13th. Meeting held at dental department of State University at Minneapolis.

Wabasha, Minn. C. H. ROBINSON, Sec'y.

ITEMS OF INTEREST

South Dakota State Board of Dental Examiners.

The South Dakota State Board of Dental Examiners will hold its next regular session for the examination of applicants for license, at Aberdeen, S. Dak., June 9th, beginning at 1.30 p. m. All applicants will be required to insert at least two gold fillings, and such other work as the Board may require. Besides the regular operating instruments each candidate is required to bring a bridge of not less than four teeth, including one Richmond crown and one molar crown, invested ready for soldering. Application must be made to the secretary at least one week before examination takes place.

G. W. COLLINS, Sec'y.
South Dakota State Board of Dental Examiners.

Montana State Board of Dental Examiners.

The annual meeting of the Montana State Board of Dental Examiners will be held in Helena June 6, 7, and 8, 1904. Application blanks may be obtained from the secretary. Applicants must furnish all materials for demonstration.

Helena, Mont. D. J. WAIT, Sec'y.

Dental Commissioners of Connecticut.

The Dental Commissioners of Connecticut hereby give notice that they will meet at Hartford, on May 14th, as prescribed by law, and will adjourn to July, for the summer examinations, so as to enable those students who do not finish their college or other educational course until June an opportunity to secure a license to practice without the long delay now made necessary because of being required to wait until November.

Hereafter the November examinations will be dispensed with until further notice.

DATE OF EXAMINATION.

Examinations to secure a license to practice dentistry in Connecticut will be held July 14, 15 and 16, 1904, at Hartford, Conn. Full particulars will be published in the Dental Journals or may be secured of the Recorder.

By direction of the Dental Commissioners.

Wallingford, Conn. J. TENNEY BARKER, Recorder.

Texas State Board of Dental Examiners.

The Texas State Board of Dental Examiners will hold its next examination in Corsicana, Texas, beginning May 9 at 10 a. m. Applicants will be examined theoretically and practically and must come prepared to do operative work, furnishing their own materials, instruments and patients. For further information address,

Hillsboro, Texas. Dr. C. C. WEAVER, Secy.

Tennessee State Board of Dental Examiners.

The Tennessee State Board of Dental Examiners will meet at Jackson, Tenn., on May 26, 27 and 28, 1904, for the examination of applicants.

Applicants for examination are required to furnish their own instruments and materials for operative and mechanical work.

W. H. P. JONES, President.
F. A. SHOTWELL, Sec'y and Treas.

Colorado State Board of Dental Examiners.

The regular semi-annual meeting of the Colorado State Board of Dental Examiners will be held in Denver, June 7th, 8th and 9th, 1904.

The examination will be both theoretical and practical, and applicants for the examination must be prepared to do such work as is required. All applications must be filed before June 7th. For particulars address,

M. S. FRASER, Sec'y,
407 Mack Building, Denver, Colo.

Idaho State Board of Dental Examiners.

The next meeting of the Idaho State Board of Dental Examiners will be held in Boise, June 13, 14 and 15, 1904. Examination fee is $25. Candidates will be examined in anatomy, physiology, chemistry, metallurgy, pathology, therapeutics, prosthetic dentistry, operative dentistry, dental materia medica, orthodontia, histology and oral surgery.

Mackay, Idaho. W. W. PALING, Secretary.

ITEMS OF INTEREST

West Virginia State Board of Dental Examiners.

The West Virginia State Board of Dental Examiners will hold its spring meeting for examinations June 1, 2 and 3, at Wheeling, W. Va. For further information address the Secretary. Lock Box 402, Morgantown, W. Va.

H. M. VAN VOORHIS, Sec'y.

North Carolina State Board of Dental Examiners.

The North Carolina State Board of Dental Examiners will meet at Morehead City on June 27.

Greensboro, N. C. J. S. BETTS, Secretary.

Pennsylvania State Board of Dental Examiners.

The Board of Dental Examiners of Pennsylvania will conduct examinations simultaneously in Philadelphia and Pittsburg, June 8-11, 1904. Applicants for license must address the Hon. C. N. Schaeffer, Secretary of the Dental Council, Harrisburg, Pa., for papers or future information.

Reunion of the Class of '96, N. Y. C. D.

The Anniversary Dinner of the Class of '96, New York College of Dentistry, will take place on Saturday evening, May 14th, 1904, at the Cafe Martin, Broadway and Twenty-sixth Street, New York City. Members of the class are earnestly requested to attend. For further information address,

CHARLES VETTER, (Chairman.)
152 Second Street, New York City.